Access DB# 18455

# SEARCH REQUEST FORM

**Scientific and Technical Information Center**

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 4-4-06
Art Unit: 1752 Phone Number 30 2-1333 Serial Number: 10/718,959
Mail Box and Bldg/Room Location: 9660 (Rem.) Results Format Preferred (circle): PAPER DISK E-MAIL

**If more than one search is submitted, please prioritize searches in order of need.**

**********

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Please see B.6.

Inventors (please provide full names):

Earliest Priority Filing Date:

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search for a polymer of Cl. #1

(Method of making such a polymer is shown in Cl. #4)



**********

| STAFF USE ONLY | Type of Search | | Vendors and cost where applicable | |
|---|---|---|---|---|
| Searcher: K. Fuller | NA Sequence (#) | | STN | ✓ |
| Searcher Phone #: | AA Sequence (#) | | Dialog | |
| Searcher Location: | Structure (#) | 2 | Questel/Orbit | |
| Date Searcher Picked Up: | Bibliographic | | Dr.Link | |
| Date Completed: 4/6/06 | Litigation | | Lexis/Nexis | |
| Searcher Prep & Review Time: 30 | Fulltext | | Sequence Systems | |
| Clerical Prep Time: | Patent Family | | WWW/Internet | |
| Online Time: 20 | Other | | Other (specify) | |

PTO-1590 (8-01)

=> FILE REG
FILE 'REGISTRY' ENTERED AT 10:29:32 ON 06 APR 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.


Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 4 APR 2006 HIGHEST RN 879269-14-4
DICTIONARY FILE UPDATES: 4 APR 2006 HIGHEST RN 879269-14-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

**********
* *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
* *
**********

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

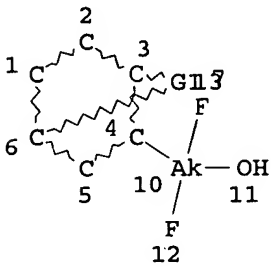
=> FILE HCAPLU
FILE 'HCAPLUS' ENTERED AT 10:29:36 ON 06 APR 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.


FILE COVERS 1907 - 6 Apr 2006 VOL 144 ISS 15
FILE LAST UPDATED: 4 Apr 2006 (20060404/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE
L3 STR 1

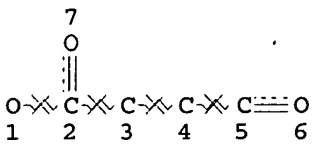



CH2·CH2
@8 @9

VAR G1=CH2/O/S/8-6 9-3
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 13

STEREO ATTRIBUTES: NONE
L4 STR 2




NODE ATTRIBUTES:
NSPEC IS RC AT 1
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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE
L6 32 SEA FILE=REGISTRY SSS FUL L3 AND L4
L8 27 SEA FILE=HCAPLUS ABB=ON L6

32 structures from queries

27 CA references

=> D L8 BIB ABS IND HITSTR 1-27

L8 ANSWER 1 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:1049200 HCAPLUS
DN 143:356602
TI Positive photoresist composition for immersion exposure and patterning method
IN Kanda, Hiromi; Kanna, Shinichi; Inabe, Haruki
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 61 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

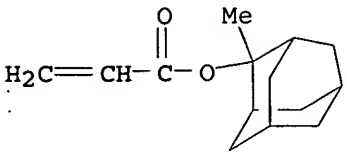
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2005266767 | A2 | 20050929 | JP 2004-352658 | 20041206 |
| PRAI JP 2004-44708 | A | 20040220 | | |

AB Title photoresist composition comprises (A) an alicyclic structure-containing resin component which contains structural repeating units with solubility parameter (SP) above 20 and has increased solubility in alkali developer liquid and (B) an actinic ray- or radiation-sensitive acid generator. A patterning method using the pos. resist is also claimed.

IC ICM G03F007-039
ICS G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST pos photoresist compn for immersion exposure and patterning method
IT Positive photoresists
(pos. photoresist composition for immersion exposure)
IT 210040-28-1P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoresist composition for immersion exposure)
IT 195000-69-2 258879-87-7 391613-69-7 460754-13-6 460754-19-2
482609-97-2 577995-45-0 726175-43-5 801304-19-8 848134-81-6
848408-37-7 848408-38-8 848408-39-9 848408-40-2 848408-42-4
848413-53-6 863232-77-3 863232-78-4 **863232-79-5**
865723-22-4 865723-24-6 865723-25-7 865723-26-8 865778-20-7
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(pos. photoresist composition for immersion exposure)
IT 66003-78-9 133710-62-0 138529-81-4 144317-44-2 194999-85-4
241806-75-7 258872-05-8 284474-28-8 301664-71-1 347193-28-6
398141-18-9 425670-64-0
RL: TEM (Technical or engineered material use); USES (Uses)
(pos. photoresist composition for immersion exposure)
IT **863232-79-5**
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(pos. photoresist composition for immersion exposure)
RN 863232-79-5 HCAPLUS
CN 2-Propenoic acid, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

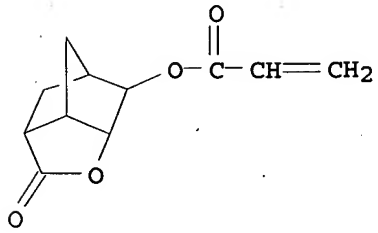
CM 1

CRN 249562-06-9
CMF C14 H20 O2



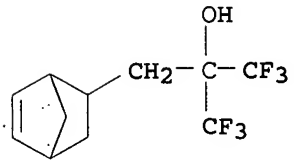
CM 2

CRN 242129-35-7
CMF C11 H12 O4



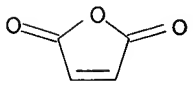
CM 3

CRN 196314-61-1
CMF C11 H12 F6 O



CM 4

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 2 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:1049198 HCAPLUS
DN 143:356600
TI Positive-working photoresist composition for liquid immersion photolithography
IN Kanda, Hiromi; Kanna, Shinichi; Inabe, Haruki
PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 58 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

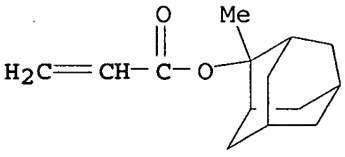
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2005266764 | A2 | ~~20050~~929 | JP 2004-344129 | 20041129 |
| PRAI JP 2004-44707 | A | 20040220 | | |

AB The title composition contains an acid-sensitive alkali-solubilizable resin and a photoacid generator, wherein the resin has a repeating unit of <20 solubility parameter(SP) and an aliphatic ring structure. Composition provides good profile pattern.

IC ICM G03F007-039
ICS G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37
ST pos photoresist compn liq immersion photolithog resin
IT Photolithography
(liquid immersion; photoresist composition for liquid immersion photolithog.)
IT Photoresists
(photoresist composition for liquid immersion photolithog.)
IT 195000-69-2P 210040-28-1P 258879-87-7P 355391-93-4P 460754-13-6P
460754-19-2P 482609-97-2P 524699-47-6P 577995-45-0P 726175-43-5P
848134-81-6P 848224-35-1P 848408-37-7P 848408-38-8P 848408-39-9P
848408-41-3P 848413-53-6P 863232-77-3P **863232-79-5P**
865723-22-4P 865723-50-8P 865723-51-9P 865723-52-0P 865758-31-2P
865758-35-6P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin in photoresist composition)
IT **863232-79-5P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin in photoresist composition)
RN 863232-79-5 HCAPLUS
CN 2-Propenoic acid, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

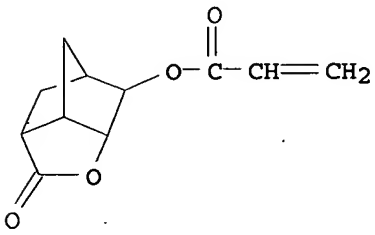
CRN 249562-06-9
CMF C14 H20 O2




CM 2

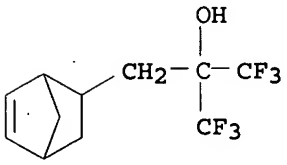
CRN 242129-35-7

CMF C11 H12 O4



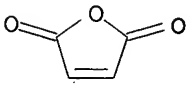
CM 3

CRN 196314-61-1
CMF C11 H12 F6 O



CM 4

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 3 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:1027984 HCAPLUS
DN 143:336284
TI A positive chemical amplification photoresist composition for immersion lithography
IN Inabe, Haruki; Kanna, Shinichi; Kanda, Hiromi
PA Fuji Photo Film Co., Ltd., Japan
SO U.S. Pat. Appl. Publ., 77 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 2005208419 | A1 | 20050922 | US 2005-77012 | 20050311 |
| | JP 2006079048 | A2 | 20060323 | JP 2005-45654 | 20050222 |
| | EP 1580598 | A2 | 20050928 | EP 2005-5530 | 20050314 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, | | | | |

BA, HR, IS, YU
PRAI JP 2004-78857 A 20040318
JP 2004-235259 A 20040812
AB A pos. photoresist composition for immersion exposure comprises a fluorine-containing resin and a photoacid generator. The photoresist shows no deterioration of photosensitivity as compared with a dry exposure and extremely low elution of acid to an immersion liquid
IC ICM G03C001-492
INCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST pos chem amplification photoresist immersion lithog
IT Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(Troy Sol S 366, KP-341; highly sensitive pos. chemical amplification photoresist formulations for immersion lithog.)
IT Positive photoresists
(chemical amplified; highly sensitive pos. chemical amplification photoresist formulations for immersion lithog.)
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(highly sensitive pos. chemical amplification photoresist formulations for immersion lithog.)
IT 120-07-0 484-47-9, 2,4,5-Triphenylimidazole 613-29-6, N,N-Dibutylaniline 2217-07-4, N,N-Dipropylaniline 24544-04-5, 2,6-Diisopropylaniline
RL: TEM (Technical or engineered material use); USES (Uses)
(basic compound; highly sensitive pos. chemical amplification photoresist formulations for immersion lithog.)
IT 865271-84-7P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(highly sensitive pos. chemical amplification photoresist formulations for immersion lithog.)
IT 865271-85-8 865271-86-9 865271-87-0 865271-88-1 865271-89-2 865271-90-5 865271-91-6 **865271-92-7** 865271-93-8 865271-94-9 865271-95-0 865271-96-1 865271-98-3 865272-01-1 865272-03-3
RL: TEM (Technical or engineered material use); USES (Uses)
(highly sensitive pos. chemical amplification photoresist formulations for immersion lithog.)
IT 284474-28-8 389859-76-1 425670-64-0 680200-03-7 852572-09-9
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; highly sensitive pos. chemical amplification photoresist formulations for immersion lithog.)
IT 96-48-0, γ-Butyrolactone 97-64-3, Ethyl lactate 108-32-7, Propylene carbonate 108-94-1, Cyclohexanone, uses 120-92-3, Cyclopentanone 583-60-8, 2-Methylcyclohexanone 1320-67-8, Propylene glycol monomethyl ether 24556-20-5 29299-43-2, Heptanone 84540-57-8, Propylene glycol monomethyl ether acetate 169965-90-6, tert-Butyl lithocholate
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent; highly sensitive pos. chemical amplification photoresist formulations for immersion lithog.)
IT 137462-24-9, Megafac F 176 216679-67-3, Megafac R 08 863402-97-5, PF 6520
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; highly sensitive pos. chemical amplification photoresist formulations for immersion lithog.)
IT **865271-92-7**

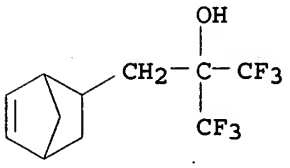
RL: TEM (Technical or engineered material use); USES (Uses)
(highly sensitive pos. chemical amplification photoresist formulations for immersion lithog.)

RN 865271-92-7 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione and 3a,4,7,7a-tetrahydro-4,7-methanoisobenzofuran-1(3H)-one (9CI) (CA INDEX NAME)

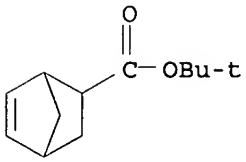
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



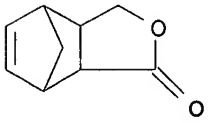
CM 2

CRN 154970-45-3
CMF C12 H18 O2



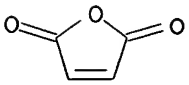
CM 3

CRN 85718-44-1
CMF C9 H10 O2



CM 4

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 4 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:960420 HCAPLUS
DN 143:257061
TI Positive photoresists for far-UV liquid-immersion exposure, and their photolithographic patterning method
IN Kanda, Hiromi; Kanna, Shinichi; Inabe, Haruki
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 56 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

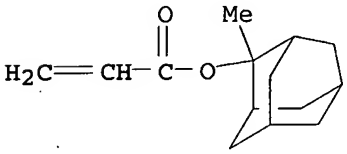
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2005234015 | A2 | 20050902 | JP 2004-39821 | 20040217 |
| PRAI JP 2004-39821 | | 20040217 | | |

AB The photoresists contain (A) polymers bearing single-cyclic or polycyclic alicyclic hydrocarbon structure and 0.0001-0.005 mequiv OH values, and increasing solubility to alkaline developers upon acid action, and (B) photoacid generators. The photoresists show wide exposure latitude and small dependency on developing time.
IC ICM G03F007-039
ICS H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST pos far UV photoresist alicyclic polymer immersion exposure
IT Photolithography
(far-UV, immersion exposure; pos. photoresists containing alicyclic hydrocarbon polymer fors far-UV liquid-immersion exposure)
IT Positive photoresists
(far-UV; pos. photoresists containing alicyclic hydrocarbon polymer fors far-UV liquid-immersion exposure)
IT 210040-28-1 258879-87-7 355391-93-4 428516-13-6 460754-19-2
524699-47-6 532989-17-6 577995-45-0 848134-81-6 848224-35-1
848408-37-7 848413-53-6 863232-75-1 863232-76-2 863232-77-3
863232-78-4 **863232-79-5** 863232-80-8 863232-81-9
863232-82-0
RL: TEM (Technical or engineered material use); USES (Uses)
(in pos. photoresists containing alicyclic hydrocarbon polymer fors far-UV liquid-immersion exposure)
IT 66003-78-9 138529-81-4 138529-84-7 144317-44-2 194999-85-4
241806-75-7 258872-05-8 284474-28-8 301664-71-1 347193-28-6
398141-18-9 425670-64-0
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
(photoacid generators; in pos. photoresists containing alicyclic hydrocarbon polymer fors far-UV liquid-immersion exposure)
IT **863232-79-5**
RL: TEM (Technical or engineered material use); USES (Uses)
(in pos. photoresists containing alicyclic hydrocarbon polymer fors far-UV liquid-immersion exposure)
RN 863232-79-5 HCAPLUS

CN 2-Propenoic acid, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

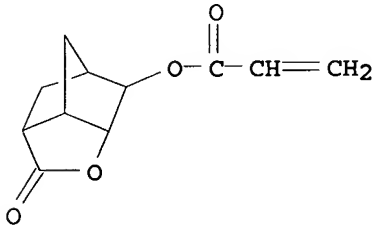
CM 1

CRN 249562-06-9
CMF C14 H20 O2



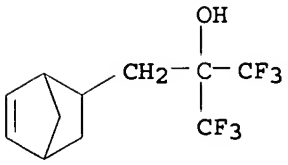
CM 2

CRN 242129-35-7
CMF C11 H12 O4



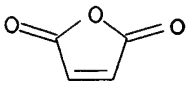
CM 3

CRN 196314-61-1
CMF C11 H12 F6 O



CM 4

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 5 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:609162 HCAPLUS
DN 143:123052
TI Positive resist compositions and pattern formation using them
IN Inabe, Haruki
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 55 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2005189501 | A2 | 20050714 | JP 2003-430595 | 20031225 |
| PRAI JP 2003-430595 | | 20031225 | | |

AB The compns. comprise (A) F-containing polymers, whose solubility for alkali developers is increased by the action of acids and (B) acid-decomposable group-containing compds. generating acids by irradiation of actinic light ray or radiation. Patterns are formed by applying the compns., exposing the resulting films, and developing. The compns. show high sensitivity for 157 nm, high dissoln. contrast, and decreased development defects.
IC ICM G03F007-004
ICS C08F012-22; C08F016-26; C08F032-00; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST pos resist far UV fluoropolymer; acid decomposable compd far UV resist; pattern formation far UV resist fluoropolymer
IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acrylic; pos. resist compns. with high sensitivity for 157-nm light for pattern formation)
IT Positive photoresists
(far-UV; pos. resist compns. with high sensitivity for 157-nm light for pattern formation)
IT 66003-76-7, Diphenyliodonium triflate 144317-44-2, Triphenylsulfonium nonaflate
RL: CAT (Catalyst use); USES (Uses)
(acid generators; pos. resist compns. with high sensitivity for 157-nm light for pattern formation)
IT 857285-80-4P 857285-81-5P 857285-83-7P 857285-84-8P 857285-86-0P 857285-87-1P 857285-89-3P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(acid generators; pos. resist compns. with high sensitivity for 157-nm light for pattern formation)
IT 391232-41-0P 857285-76-8P 857285-77-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediates in preparation of acid generators; pos. resist compns. with high sensitivity for 157-nm light for pattern formation)
IT 365568-38-3P 430437-18-6P 607710-65-6P **857285-70-2P** 857285-72-4P 857285-74-6P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. resist compns. with high sensitivity for 157-nm light for pattern formation)

IT 107-59-5, tert-Butyl chloroacetate 375-73-5, Nonafluorobutanesulfonic acid 542-88-1, Chloromethyl ether 999-97-3, Hexamethyldisilazane 1538-75-6, 2,2-Dimethylpropanoic anhydride 258342-00-6 444884-99-5 857285-75-7 857285-79-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactants in preparation of acid generators; pos. resist compns. with high sensitivity for 157-nm light for pattern formation)

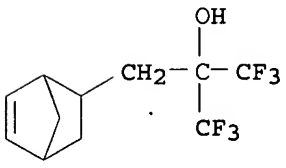
IT **857285-70-2P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. resist compns. with high sensitivity for 157-nm light for pattern formation)

RN 857285-70-2 HCAPLUS

CN 2-Propenoic acid, 2-(trifluoromethyl)-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



CM 2

CRN 188739-86-8
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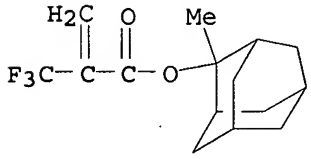
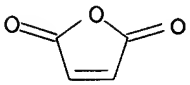


CM 3

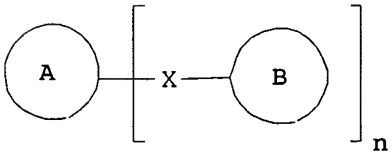
CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 6 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:235479 HCAPLUS
DN 142:325910
TI Positive resist compositions and pattern formation using them for manufacture of semiconductor devices
IN Inabe, Haruki
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 54 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2005070217 | A2 | 20050317 | JP 2003-297430 | 20030821 |
| PRAI JP 2003-297430 | | 20030821 | | |

GI



I

AB The compns. comprise (A) alkali-insol. polymers having ≥1 repeating units C(CR1yR2yR3y)(CR4yR5yR6y)OY (R1y-R6y = H, F, alkyl, cycloalkyl; ≥1 of R1y-R6y = F, F-substituted alkyl or cycloalkyl; Y = H, organic group) showing solubility in alkali developers by the action of acids, (B) acid generators by irradiation of actinic beam or radiation, and (C) aromatic compds. I (A, B = aromatic ring; A and B may be substituted with halo, alkyl, cycloalkyl, OH, CO2H, or alkoxy; X = single bond, O, S, alkylene, cycloalkylene, alkenylene, arylene; n ≥0). Patterns are formed by forming films of the compns., exposing the films, and developing. The compns. show high sensitivity for F2 excimer laser light, good line-end shortening property, and high post-exposure delay stability.
IC ICM G03F007-039
ICS G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST pos resist vacuum UV fluoropolymer; vacuum UV resist arom compd additive; post exposure delay stability pos resist; semiconductor manuf vacuum UV resist fluoropolymer
IT Semiconductor device fabrication
(pos. vacuum-UV resist compns. with high post-exposure delay stability

for pattern formation)

IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. vacuum-UV resist compns. with high post-exposure delay stability for pattern formation)

IT Positive photoresists
(vacuum-UV; pos. vacuum-UV resist compns. with high post-exposure delay stability for pattern formation)

IT 66003-76-7, Diphenyliodonium triflate 66003-78-9, Triphenylsulfonium triflate 144089-15-6, Triphenylsulfonium perfluorooctanesulfonate 144317-44-2, Triphenylsulfonium nonaflate
RL: CAT (Catalyst use); USES (Uses)
(acid generators; pos. vacuum-UV resist compns. with high post-exposure delay stability for pattern formation)

IT **380886-63-5P 380886-66-8P** 380886-81-7P 430437-18-6P 430437-33-5P 847986-69-0P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. vacuum-UV resist compns. with high post-exposure delay stability for pattern formation)

IT 129-00-0, Pyrene, uses 620-92-8 847986-70-3
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(pos. vacuum-UV resist compns. with high post-exposure delay stability for pattern formation)

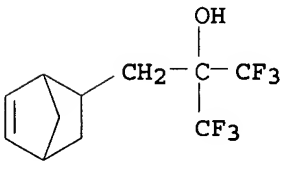
IT **380886-63-5P 380886-66-8P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. vacuum-UV resist compns. with high post-exposure delay stability for pattern formation)

RN 380886-63-5 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2,5-furandione (9CI) (CA INDEX NAME)

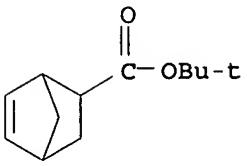
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



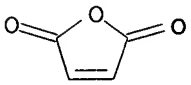

CM 2

CRN 154970-45-3
CMF C12 H18 O2



CM 3

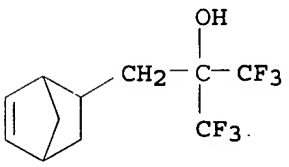
CRN 108-31-6
CMF C4 H2 O3



RN 380886-66-8 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2,5-furandione (9CI) (CA INDEX NAME)

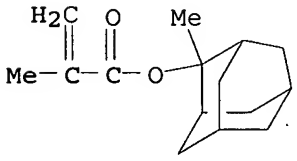
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



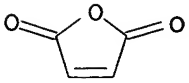
CM 2

CRN 177080-67-0
CMF C15 H22 O2



CM 3

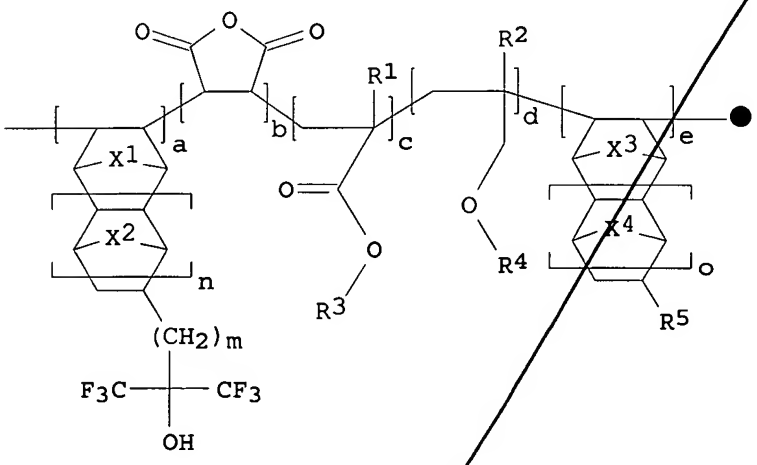
CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 7 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:98956 HCAPLUS
DN 142:207614
TI Photoresist polymer and photoresist composition containing the same
IN Lee, Geun Su; Bok, Cheol Kyu; Moon, Seung Chan; Shin, Ki Soo; Kim, Jae Hyun; Kim, Jung Woo; Lee, Sang Hyang; Kang, Jae Hyun
PA Hynix Semiconductor Inc., S. Korea; Dongjin Semichem Co., Ltd.
SO U.S. Pat. Appl. Publ., 17 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI US 2005026070 | A1 | 20050203 | US 2003-719905 | 20031121 |
| US 7022458 | B2 | 20060404 | | |
| PRAI KR 2003-52337 | A | 20030729 | | |

GI



I

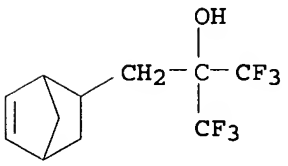
AB Photoresist polymers and photoresist compns. are disclosed. A photoresist polymer is represented by I (X1-4 = CH2, CH2CH2, S; R1,2 = H, CH3, CF3; R3 = C1-20 alkyl, etc.; R4 = C1-20 hydroxyalkyl, etc.; R5 = H, C1-20 hydroxyalkyl, etc.; m = 0-2; and n = 0, 1). The photoresist compns. have excellent etching resistance, thermal resistance and adhesive property, and high affinity to an developing solution, thereby improving LER (line edge roughness).

IC ICM G03C001-76
INCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38

ST photoresist polymer compn adamantyl acrylic
IT Photoresists
(photoresist polymer for photoresist composition)
IT **836623-58-6P 836623-59-7P 836623-60-0P**
**836623-61-1P 836623-63-3P 836623-64-4P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photoresist polymer for photoresist composition)
IT **836623-58-6P 836623-59-7P 836623-60-0P**
**836623-61-1P 836623-63-3P 836623-64-4P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photoresist polymer for photoresist composition)
RN 836623-58-6 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

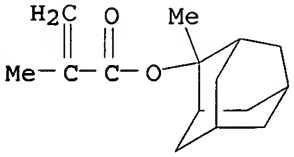
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



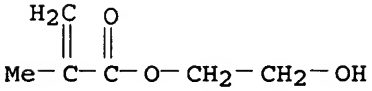
CM 2

CRN 177080-67-0
CMF C15 H22 O2



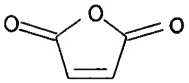
CM 3

CRN 868-77-9
CMF C6 H10 O3



CM 4

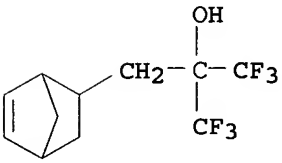
CRN 108-31-6
CMF C4 H2 O3



RN 836623-59-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

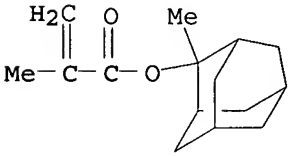
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



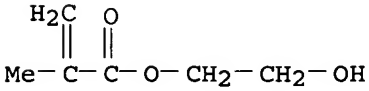
CM 2

CRN 177080-67-0
CMF C15 H22 O2



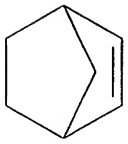
CM 3

CRN 868-77-9
CMF C6 H10 O3



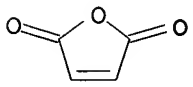
CM 4

CRN 498-66-8
CMF C7 H10



CM 5

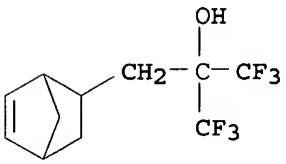
CRN 108-31-6
CMF C4 H2 O3



RN 836623-60-0 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione and 2-hydroxyethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



CM 2

CRN 868-77-9
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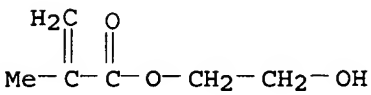
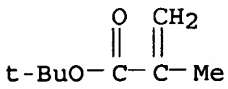


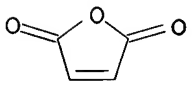
CM 3

CRN 585-07-9
CMF C8 H14 O2



CM 4

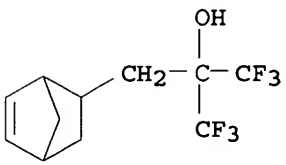
CRN 108-31-6
CMF C4 H2 O3



RN 836623-61-1 HCAPLUS
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 1,1-dimethylethyl 2-methyl-2-propenoate, 2,5-furandione and 2-hydroxyethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

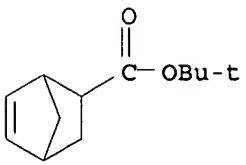
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



CM 2

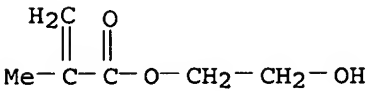
CRN 154970-45-3
CMF C12 H18 O2



CM 3

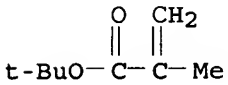
CRN 868-77-9

CMF C6 H10 O3



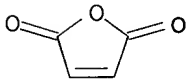
CM 4

CRN 585-07-9
CMF C8 H14 O2



CM 5

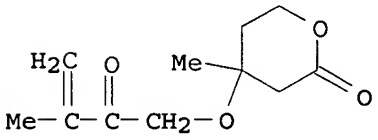
CRN 108-31-6
CMF C4 H2 O3



RN 836623-63-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione and tetrahydro-4-methyl-4-[(3-methyl-2-oxo-3-butenyl)oxy]-2H-pyran-2-one (9CI) (CA INDEX NAME)

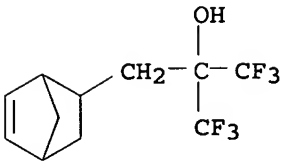
CM 1

CRN 836623-62-2
CMF C11 H16 O4



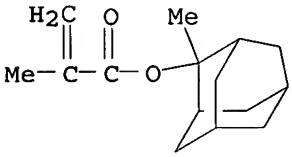
CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



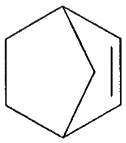
CM 3

CRN 177080-67-0
CMF C15 H22 O2



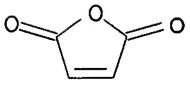
CM 4

CRN 498-66-8
CMF C7 H10



CM 5

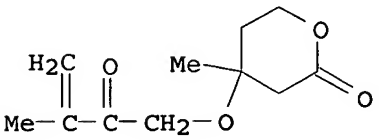
CRN 108-31-6
CMF C4 H2 O3



RN 836623-64-4 HCAPLUS
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione, 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate and tetrahydro-4-methyl-4-[(3-methyl-2-oxo-3-butenyl)oxy]-2H-pyran-2-one (9CI) (CA INDEX NAME)

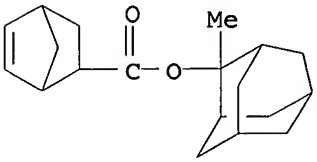
CM 1

CRN 836623-62-2
CMF C11 H16 O4



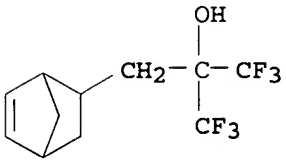
CM 2

CRN 328087-85-0
CMF C19 H26 O2



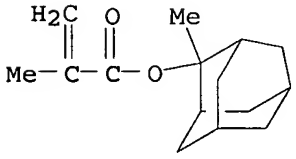
CM 3

CRN 196314-61-1
CMF C11 H12 F6 O



CM 4

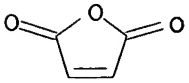
CRN 177080-67-0
CMF C15 H22 O2



CM 5

CRN 108-31-6

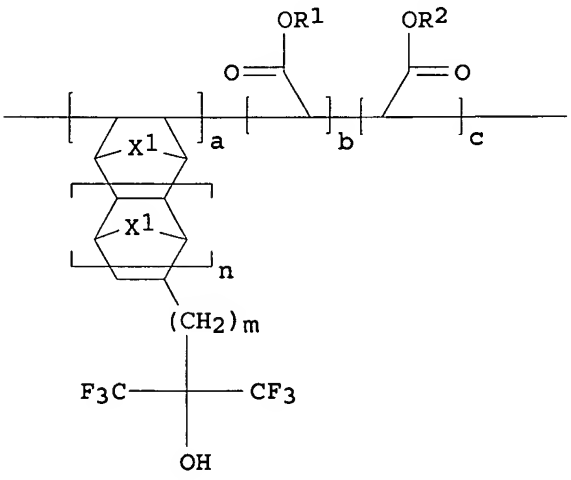
CMF C4 H2 O3



L8 ANSWER 8 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:1976 HCAPLUS
DN 142:103156
TI Photoresist polymer and photoresist composition containing the same
IN Lee, Geun Su
PA S. Korea
SO U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI US 2004265735 | A1 | 20041230 | US 2003-718959 | 20031121 |
| PRAI KR 2003-42561 | A | 20030627 | | |

GI



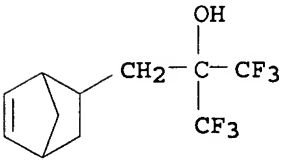
I

AB Photoresist polymers and photoresist compns. are disclosed. A photoresist polymer represented by Formula I (X1,2 =CH2, CH2CH2, O, S; R1 = acid labile protecting group, C1-20 alkyl, cycloalkyl; R2 = H, C1-20 alkyl, C5-10 cycloalkyl, etc.; m = 0-2; n = 0,1; the relative ratio of a:b:c is in range of 50 mol %: 20-50 mol %: 0-30 mol %) and a photoresist composition containing the same have excellent etching resistance, thermal resistance and adhesive property, and high affinity to an developing solution, thereby improving LER (line edge roughness).
IC ICM G03C001-76
INCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)
Section cross-reference(s): 35, 38
ST photoresist polymer compn
IT Photoresists
(photoresist polymer for photoresist composition)
IT 702-98-7DP, 2-Methyl-2-adamantanol, reaction product with hydrolyzed Maleic anhydride-norbornene hexafluoro isopropylalc. copolymer and thionylchloride **357397-09-2DP**, hydrolyzed and reaction product with thionylchloride then Me adamantanol
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photoresist polymer for photoresist composition)
IT 7719-09-7, Thionyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoresist polymer for photoresist composition)
IT **357397-09-2DP**, hydrolyzed and reaction product with thionylchloride then Me adamantanol
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photoresist polymer for photoresist composition)
RN 357397-09-2 HCAPLUS
CN 2,5-Furandione, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol (9CI) (CA INDEX NAME)

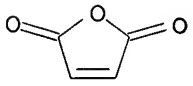
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



CM 2

CRN 108-31-6
CMF C4 H2 O3

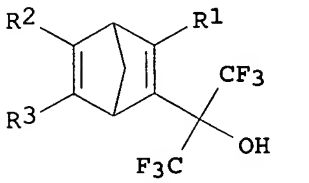


L8 ANSWER 9 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:928772 HCAPLUS
DN 141:403469
TI Norbornadienes bearing hexafluorocarbinol groups and their hydroxy- or polymerizable group-containing derivatives for fluoropolymers for resists, and pattern formation using the resists
IN Komoritani, Haruhiko; Miyazawa, Satoru; Kawamura, Katsunori; Kobayashi, Satoru; Maeda, Kazuhiko
PA Central Glass Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 27 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2004307447 | A2 | 20041104 | JP 2003-135228 | 20030514 |
| US 2004225159 | A1 | 20041111 | US 2004-781844 | 20040220 |
| US 6858760 | B2 | 20050222 | | |

PRAI JP 2003-43496 A 20030221
JP 2003-135228 A 20030514
OS MARPAT 141:403469
GI




I

AB The norbornadienes are I [R1-R3 = H, (fluoro)alkyl, F, C(CF3)2OH; ≥1 of C(CF3)2OH may be protected with (F-, O-, N-, or CO-containing) C1-25 (cyclic) hydrocarbyl, (F-, O-, N-, or CO-containing) aromatic hydrocarbyl]. In the hydroxy-containing derivs., ≥1 of R1-R3 are OH. In the polymerizable group-containing derivs., ≥1 of R1-R3 are R13R12C:CR10R11 [R10-R12 = H, F, C1-25 (cyclic) (fluoro)alkyl; R13 = CH2, C2-20 (cyclic) (fluoro)alkylene, O, S, CO2, dialkylsilylene]. The resists containing the norbornadienes and/or the derivs. show high sensitivity to vacuum-UV regions.

IC ICM C07C033-44
ICS C07C035-52; C07C043-196; C07C069-533; C07C069-54; C08F032-02; C08G061-08; G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 24, 35, 38
ST hexafluorocarbinol norbornadiene polymer vacuum UV resist
IT Photoresists
(UV, vacuum-UV; manufacture of norbornadienes bearing hexafluorocarbinol groups and their hydroxy- or polymerizable group-containing derivs. for fluoropolymers for vacuum-UV resists)
IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acrylic; manufacture of norbornadienes bearing hexafluorocarbinol groups and their hydroxy- or polymerizable group-containing derivs. for fluoropolymers for vacuum-UV resists)
IT 646-72-0P 647-01-8P 557771-70-7P 787553-29-1P 787553-30-4P 787553-31-5P 787553-32-6P 787571-57-7P 787571-58-8P 787571-59-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(manufacture of norbornadienes bearing hexafluorocarbinol groups and their hydroxy- or polymerizable group-containing derivs. for fluoropolymers for vacuum-UV resists)

IT 107-30-2DP, Methoxymethyl chloride, reaction product with hexafluorohydroxyisopropylbicycloheptadienyl methacrylate homopolymer 787553-33-7DP, reaction product with methoxymethyl chloride 787553-33-7P **787553-34-8P** 787571-60-2P 787571-61-3P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of norbornadienes bearing hexafluorocarbinol groups and their hydroxy- or polymerizable group-containing derivs. for fluoropolymers for vacuum-UV resists)

IT 77-73-6, Dicyclopentadiene 109-92-2, Ethyl vinyl ether 684-16-2, Hexafluoroacetone 920-46-7, Methacryloyl chloride 90715-73-4, α-Trifluoromethylacryloyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(manufacture of norbornadienes bearing hexafluorocarbinol groups and their hydroxy- or polymerizable group-containing derivs. for fluoropolymers for vacuum-UV resists)

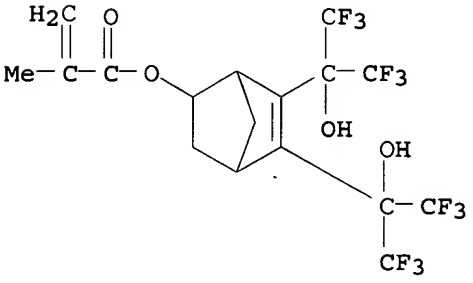
IT **787553-34-8P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of norbornadienes bearing hexafluorocarbinol groups and their hydroxy- or polymerizable group-containing derivs. for fluoropolymers for vacuum-UV resists)

RN 787553-34-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 5,6-bis[2,2,2-trifluoro-1-hydroxy-1-(trifluoromethyl)ethyl]bicyclo[2.2.1]hept-5-en-2-yl ester, polymer with 2,5-furandione and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

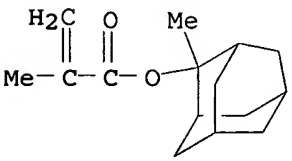
CM 1

CRN 787553-31-5
CMF C17 H14 F12 O4



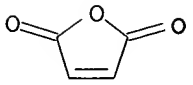
CM 2

CRN 177080-67-0
CMF C15 H22 O2



CM 3

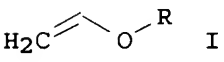
CRN 108-31-6
CMF C4 H2 O3



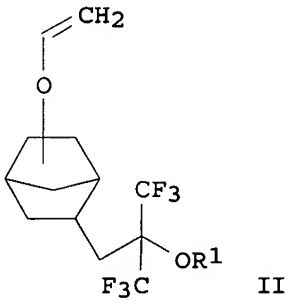
L8 ANSWER 10 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:412905 HCAPLUS
DN 140:424105
TI Fluorine-containing vinyl ethers, their polymers, and resist compositions using such polymers
IN Kobayashi, Satoru; Maeda, Kazuhiko; Tsujishita, Tooru
PA Central Glass Company, Limited, Japan
SO PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2004041762 | A1 | 20040521 | WO 2003-JP13924 | 20031030 |
| | W: KR, US | | | | |
| | JP 2004155680 | A2 | 20040603 | JP 2002-320871 | 20021105 |
| | JP 2004231815 | A2 | 20040819 | JP 2003-22925 | 20030131 |
| PRAI | JP 2002-320871 | A | 20021105 | | |
| | JP 2003-22925 | A | 20030131 | | |

OS MARPAT 140:424105
GI



I



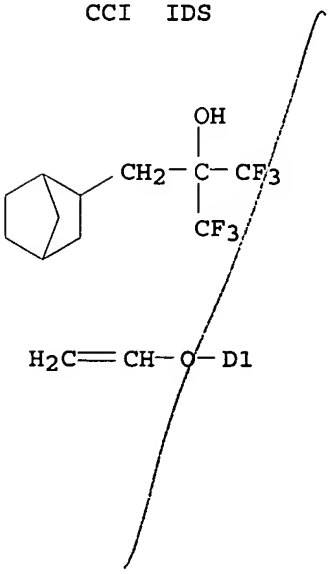
II

AB The invention relates to a fluorine-containing vinyl ether represented by the formula (I), wherein R = an organic group containing at least one fluorine atom and a cyclic structure. The invention further relates to a fluorine-containing copolymer containing (a) a first unit derived from a first monomer that is a fluorine-containing vinyl ether represented by the formula (II) where R1 = H or C1-8 alkyl group that optionally contains an oxygen atom; and (b) a second unit derived from a second monomer that is at least one selected from acrylic esters and methacrylic esters.

IC ICM C07C043-192
ICS C07C043-196; C07C043-225; C07C043-23; C07C043-172; C08F016-12; G03F007-039
CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 76
ST norbornene vinyl ether fluorine fluoropolymer pos resist film
IT Plastic films
(fluorine-containing vinyl ethers, their polymers, and resist compns. using such polymers)
IT Resists
(pos.-working; fluorine-containing vinyl ethers, their polymers, and resist compns. using such polymers)
IT 3375-31-3 37275-48-2, Dipyridyl
RL: CAT (Catalyst use); USES (Uses)
(fluorine-containing vinyl ethers, their polymers, and resist compns. using such polymers)
IT 634200-99-0P 691870-38-9P 691870-39-0P 691870-40-3P 691870-41-4P
691870-42-5P 691870-43-6P 691870-44-7P 691870-45-8P
**691870-46-9P** 691870-47-0P
RL: IMF (Industrial manufacture); PREP (Preparation)
(fluorine-containing vinyl ethers, their polymers, and resist compns. using such polymers)
IT 109-92-2, Ethyl vinyl ether 926-02-3, tert-Butyl vinyl ether
399518-71-9 669768-29-0 691410-51-2 691870-37-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorine-containing vinyl ethers, their polymers, and resist compns. using such polymers)
IT 634200-89-8P 691410-52-3P 691410-53-4P 691870-36-7P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomer; fluorine-containing vinyl ethers, their polymers, and resist compns. using such polymers)
IT **691870-46-9P**
RL: IMF (Industrial manufacture); PREP (Preparation)
(fluorine-containing vinyl ethers, their polymers, and resist compns. using such polymers)
RN 691870-46-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 5(or 6)-(ethenyloxy)-α,α-bis(trifluoromethyl)bicyclo[2.2.1]heptane-2-ethanol and 2,5-furandione (9CI) (CA INDEX NAME)

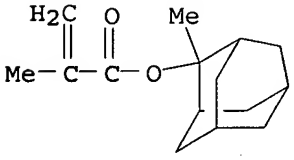
CM 1

CRN 634200-89-8
CMF C13 H16 F6 O2
CCI IDS



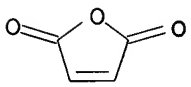
CM 2

CRN 177080-67-0
CMF C15 H22 O2



CM 3

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 11 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:272035 HCAPLUS
DN 140:312008
TI Positive-working resist composition with improved precision in response to light
IN Fujimori, Toru
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 75 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2004102019 | A2 | 20040402 | JP 2002-265400 | 20020911 |
| PRAI JP 2002-265400 | | 20020911 | | |

AB Title resist composition comprises (A) a compound generating acid upon actinic ray irradiation, (B) a fluorine-containing polymer which decomps. and has increased solubility in alkaline developing liquid in the presence of an acid, and (C) at least one nitrogen-containing ionic basic compound
IC ICM G03F007-039
ICS G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST pos resist precision response fluoropolymer
IT Positive photoresists
(pos.-working resist composition with improved precision in response to light)
IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos.-working resist composition with improved precision in response to light)

IT 109-92-2DP, Ethyl vinyl ether, reaction products with hydroxy-containing polymers 103983-46-6DP, reaction products with hydroxy-containing polymers 262617-13-0P 370866-15-2P 430436-66-1P 430436-68-3P 430436-78-5P 430436-81-0P 430436-90-1P 430436-91-2P 430436-97-8P 430436-98-9P **430437-11-9P** 430437-12-0P 430437-14-2P 430437-17-5P 430437-22-2P 430437-27-7P 430437-33-5P 430437-35-7P 430437-40-4P 431062-16-7P 431062-17-8P 431062-18-9P 431062-20-3P 462109-80-4DP, reaction products 524952-70-3P 524952-73-6P 524952-74-7P 540729-51-9P 676488-04-3P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos.-working resist composition with improved precision in response to light)

IT 75-59-2, Tetramethylammonium hydroxide 102-82-9, Tributylamine 102-87-4, Tridodecylamine 120-07-0 556-81-0 1116-76-3, Trioctylamine 1122-58-3, 4-Dimethylaminopyridine 2052-49-5, Tetrabutylammonium hydroxide 2403-88-5, 2,2,6,6-Tetramethyl-4-hydroxypiperidine 3001-72-7, {1,5-Diazabicyclo[4.3.0]-5-nonene} 4107-98-6, N,N-Diisopropylaniline 6674-22-2, {1,8-Diazabicyclo[5.4.0]-7-undecene} 17756-56-8, Tetrahexylammonium hydroxide 36631-19-3, Triphenylimidazole 133710-62-0 138529-84-7 160481-39-0 209482-18-8 241806-75-7 258872-05-8 284474-28-8 300374-81-6 301664-71-1 389859-76-1 391232-40-9 398141-23-6 462653-49-2 470482-89-4 474510-73-1 506445-12-1 524959-18-0
RL: TEM (Technical or engineered material use); USES (Uses)
(pos.-working resist composition with improved precision in response to light)

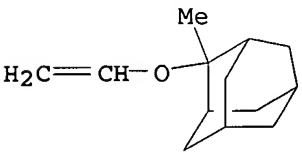
IT **430437-11-9P**
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos.-working resist composition with improved precision in response to light)

RN 430437-11-9 HCAPLUS

CN 2,5-Furandione, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2-(ethenyloxy)-2-methyltricyclo[3.3.1.13,7]decane (9CI) (CA INDEX NAME)

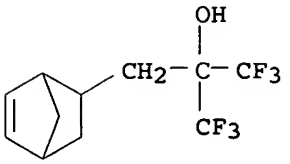
CM 1

CRN 430437-10-8
CMF C13 H20 O



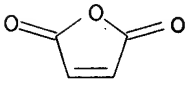

CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



CM 3

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 12 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:754897 HCAPLUS
DN 139:252537
TI Positive resist composition
IN Fujimori, Toru
PA Fuji Photo Film Co., Ltd., Japan
SO Eur. Pat. Appl., 89 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | EP 1347335 | A1 | 20030924 | EP 2003-6122 | 20030318 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| | JP 2003270791 | A2 | 20030925 | JP 2002-74565 | 20020318 |
| | US 2003224287 | A1 | 20031204 | US 2003-388408 | 20030317 |
| PRAI | JP 2002-74565 | A | 20020318 | | |

AB A pos. photoresist composition used in fabrication of semiconductor devices comprises: (A) a compound capable of generating an acid on exposure to active light rays or a radiation; (B) a resin which is insol. or sparingly soluble in an alkali and becomes alkali-soluble by an action of an acid; and (C) an acyclic compound having at least three groups selected from a hydroxyl group and a substituted hydroxyl group.
IC ICM G03F007-039
ICS G03F007-004
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST pos photoresist compn
IT Photoresists
(pos. resist composition)
IT Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(surface active agent; pos. photoresist composition containing)
IT 102-82-9, Tributylamine 102-87-4, Tridodecylamine 120-07-0 484-47-9 1116-76-3, Trioctylamine 1122-58-3, 4-Dimethylaminopyridine 2403-88-5, 2,2,6,6-Tetramethyl-4-hydroxypiperidine 3001-72-7, {1,5-

Diazabicyclo[4.3.0]-5-nonene} 6674-22-2, {1,8-Diazabicyclo[5.4.0]-7-undecene} 153921-59-6, Diisopropylaniline
RL: TEM (Technical or engineered material use); USES (Uses)
(basic compound; pos. photoresist composition containing)

IT 109-92-2DP, Ethyl vinyl ether, reaction product with polyhydroxystyrene 24979-70-2DP, VP15000, reaction product with alkyl vinyl ether 159296-87-4P 200808-68-0P 250378-10-0P, Butyrolactone methacrylate-2-ethyl-2-adamantyl methacrylate copolymer 262617-13-0P 288303-55-9P 325143-38-2P 364736-22-1P 391232-36-3P 398140-43-7P 398140-45-9P 398140-47-1P 398140-50-6P 398140-52-8P 398140-55-1P 398140-57-3P 398140-59-5P 398140-64-2P 398140-69-7P 398140-73-3P 398140-77-7P 398140-78-8P 398140-79-9P 398140-81-3P 398140-88-0P, tert-Butyl norbornenecarboxylate-maleic anhydride-2-methyl-2-adamantyl acrylate-norbornene lactone acrylate copolymer 398140-89-1P 398140-94-8P 398141-00-9P 398141-11-2P 398141-13-4P 398141-14-5P 405509-18-4P 430436-66-1P 430436-67-2P 430436-68-3P 430436-70-7P 430436-72-9P 430436-74-1P 430436-76-3P 430436-78-5P 430436-79-6P 430436-81-0P 430436-82-1P 430436-84-3P 430436-85-4P 430436-86-5P 430436-87-6P 430436-89-8P 430436-90-1P 430436-91-2P 430436-92-3P 430436-94-5P 430436-95-6P 430436-97-8P 430436-98-9P 430436-99-0P 430437-01-7P 430437-03-9P 430437-04-0P 430437-05-1P 430437-09-5P **430437-11-9P** 430437-12-0P 430437-13-1P 430437-14-2P 430437-15-3P 430437-17-5P 430437-18-6P 430437-19-7P 430437-21-1P 430437-24-4P 431062-12-3P 431062-14-5P 431062-16-7P 431062-17-8P 431062-18-9P 431062-20-3P 431062-22-5P 462109-80-4P 471257-28-0P 503003-64-3P 597553-03-2P 597553-04-3P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoresist composition containing)

IT 50-70-4, Sorbitol, uses 69-65-8, Mannitol 7493-90-5, Threitol 52894-25-4, 1,2,7,8-Octanetetrol 597553-05-4 597553-06-5
RL: TEM (Technical or engineered material use); USES (Uses)
(pos. photoresist composition containing)

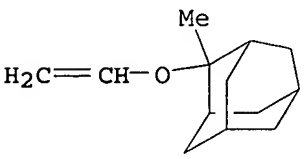
IT 137462-24-9, Megafac F176 216679-67-3, Megafac R08
RL: TEM (Technical or engineered material use); USES (Uses)
(surface active agent; pos. photoresist composition containing)

IT **430437-11-9P**
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoresist composition containing)

RN 430437-11-9 HCAPLUS
CN 2,5-Furandione, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2-(ethenyloxy)-2-methyltricyclo[3.3.1.13,7]decane (9CI) (CA INDEX NAME)

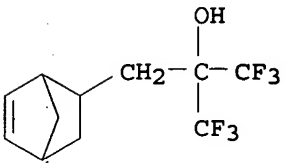
CM 1

CRN 430437-10-8
CMF C13 H20 O



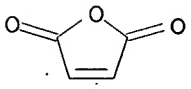
CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



CM 3

CRN 108-31-6
CMF C4 H2 O3



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 13 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:738010 HCAPLUS
DN 139:252521
TI Negative photoresists for short wavelength imaging
IN Barclay, George G.; Pugliano, Nicholas
PA Shipley Company, LLC, USA
SO PCT Int. Appl., 42 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2003077029 | A1 | 20030918 | WO 2003-US6532 | 20030304 |
| | WO 2003077029 | C2 | 20031224 | | |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | AU 2003217892 | A1 | 20030922 | AU 2003-217892 | 20030304 |
| | US 2003235785 | A1 | 20031225 | US 2003-382090 | 20030304 |
| | EP 1481282 | A1 | 20041201 | EP 2003-713864 | 20030304 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| | JP 2005519345 | T2 | 20050630 | JP 2003-575183 | 20030304 |

CN 1639634 A 20050713 CN 2003-805088 20030304
PRAI US 2002-361547P P 20020304
WO 2003-US6532 W 20030304

AB New neg.-acting photoresist compns. are provided that are particularly useful for imaging at short wavelengths, particularly sub-200 nm wavelengths such as 193 nm. Resists of the invention provide contrast between exposed and unexposed coating process layer regions through crosslinking or other solubility switching mechanism. Preferred resists of the invention include a resin component that contains repeat units that facilitate aqueous base solubility

IC ICM G03C005-00
ICS G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST neg photoresist imaging

IT Light-sensitive materials
Negative photoresists
(neg. photoresists for short wavelength imaging)

IT 600155-34-8P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(hydrolytic; neg. photoresists for short wavelength imaging)

IT **600155-32-6P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(neg. photoresists for short wavelength imaging)

IT 66003-78-9, Triphenylsulfonium triflate 600154-27-6
RL: TEM (Technical or engineered material use); USES (Uses)
(neg. photoresists for short wavelength imaging)

IT 133710-62-0
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; neg. photoresists for short wavelength imaging)

IT **600154-26-5P**, 1,1,1,3,3,3-Hexafluoropropan-2-ol-norbornen-maleic anhydride copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin; neg. photoresists for short wavelength imaging)

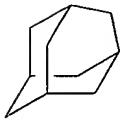
IT **600155-32-6P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(neg. photoresists for short wavelength imaging)

RN 600155-32-6 HCAPLUS

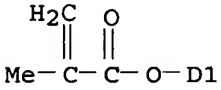
CN 2-Propenoic acid, 2-methyl-, hydroxytricyclo[3.3.1.13,7]decyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-methanol and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 600155-31-5
CMF C14 H20 O3
CCI IDS

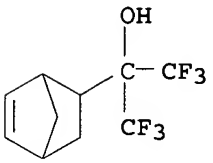


D1—OH



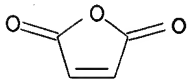
CM 2

CRN 369375-16-6
CMF C10 H10 F6 O



CM 3

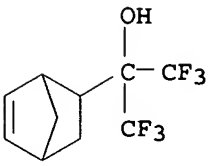
CRN 108-31-6
CMF C4 H2 O3



IT **600154-26-5P**, 1,1,1,3,3,3-Hexafluoropropan-2-ol-norbornen-maleic anhydride copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin; neg. photoresists for short wavelength imaging)
RN 600154-26-5 HCAPLUS
CN 2,5-Furandione, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-methanol (9CI) (CA INDEX NAME)

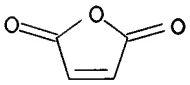
CM 1

CRN 369375-16-6
CMF C10 H10 F6 O



CM 2

CRN 108-31-6
CMF C4 H2 O3



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 14 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:735196 HCAPLUS
DN 139:267983
TI Positive-working photoresist composition containing polymer with fluoro-aliphatic group
IN Fujimori, Toru
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 88 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2003262952 | A2 | 20030919 | JP 2002-65444 | 20020311 |
| PRAI JP 2002-65444 | | 20020311 | | |

AB The composition contains (A) a compound generating an acid by irradiation of actinic ray, (B) a resin which decomps. by the action of an acid and whose solubility in alkaline developer increases, and (C) a polymer with fluoro-aliphatic group formed from a monomer CH2:CR1COX(CH2)m(CF2CF2)nF (R1 = H, Me; X = O, S, NR2; m = 1-6; n = 2-4; R2 = H, C1-4 alkyl). Developing defect is prevented and the composition is useful for manufacture of integrated circuits, semiconductor device, and wiring substrates.

IC ICM G03F007-004
ICS C08F020-22; C08F020-38; C08F020-54; C08F020-68; C08F020-70; G03F007-033; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST pos photoresist acrylic polymer fluoroaliph group
IT Surfactants
(fluorosurfactants; pos. photoresist composition containing polymer with fluoro-aliphatic group)
IT Positive photoresists
(pos. photoresist composition containing polymer with fluoro-aliphatic group)
IT Integrated circuits

(pos. photoresist composition containing polymer with fluoro-aliphatic group for manufacture of integrated circuits)

IT Semiconductor device fabrication
(pos. photoresist composition containing polymer with fluoro-aliphatic group for semiconductor device fabrication)

IT 66003-78-9 133710-62-0 138529-84-7 160481-39-0 205682-99-1
241806-75-7 258872-05-8 284474-28-8 300374-81-6 301664-71-1
389859-76-1 391232-40-9 398141-18-9 462653-49-2
RL: TEM (Technical or engineered material use); USES (Uses)
(acid generator; pos. photoresist composition containing polymer with fluoro-aliphatic group)

IT 250378-10-0P, Butyrolactone methacrylate-2-ethyl-2-adamantyl methacrylate copolymer 262617-13-0P 328061-11-6P 350992-58-4P 351197-82-5P
359635-35-1P 364736-22-1P 367283-78-1P 391232-36-3P 398140-38-0P
398140-43-7P 398140-45-9P 398140-57-3P 398140-64-2P 398140-69-7P
398140-79-9P 398140-86-8P 398140-87-9P 398140-88-0P 398140-89-1P
398141-00-9P 398141-11-2P 398141-14-5P 430436-66-1P 430436-67-2P
430436-68-3P 430436-70-7P 430436-72-9P 430436-74-1P 430436-76-3P
430436-78-5P 430436-79-6P 430436-81-0P 430436-82-1P 430436-84-3P
430436-85-4P 430436-86-5P 430436-87-6P 430436-89-8P 430436-90-1P
430436-91-2P 430436-92-3P 430436-94-5P 430436-95-6P 430436-97-8P
430436-98-9P 430436-99-0P 430437-01-7P 430437-03-9P 430437-04-0P
430437-05-1P 430437-07-3P 430437-09-5P **430437-11-9P**
430437-12-0P 430437-13-1P 430437-14-2P 430437-15-3P 430437-17-5P
430437-18-6P 430437-19-7P 430437-21-1P 430437-22-2P 430437-24-4P
431062-12-3P 431062-14-5P 431062-16-7P 431062-17-8P 431062-18-9P
431062-20-3P 431062-22-5P 482609-97-2P 503003-64-3P 524699-47-6P
532989-17-6P 601490-00-0P 601490-01-1P 601490-02-2P 601490-03-3P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoresist composition containing polymer with fluoro-aliphatic group)

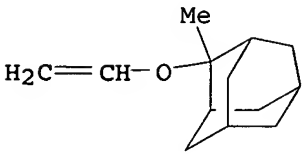
IT 601490-04-4 601490-06-6 601490-07-7 601490-09-9 601490-10-2
601490-11-3 601490-12-4 601490-13-5 601490-14-6 601491-23-0
602299-24-1 602299-25-2 602299-26-3 602299-27-4 602299-28-5
602299-29-6 602299-30-9 602299-31-0 602299-32-1 602299-33-2
602299-34-3 602299-35-4
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(surfactant; pos. photoresist composition containing polymer with fluoro-aliphatic group)

IT **430437-11-9P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoresist composition containing polymer with fluoro-aliphatic group)

RN 430437-11-9 HCAPLUS
CN 2,5-Furandione, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2-(ethenyloxy)-2-methyltricyclo[3.3.1.13,7]decane (9CI) (CA INDEX NAME)

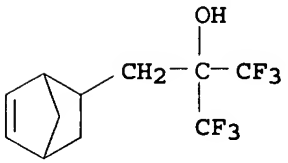
CM 1

CRN 430437-10-8
CMF C13 H20 O



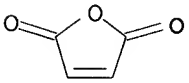
CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



CM 3

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 15 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:369197 HCAPLUS
DN 138:393073
TI Positive-working photoresist composition containing fluoro-substituted nitrogen compound
IN Fujimori, Toru; Kanna, Shinichi
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 53 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 2003140349 | A2 | 20030514 | JP 2001-339439 | 20011105 |
| PRAI | JP 2001-339439 | | 20011105 | | |

AB The composition contains (A) a polymer with F-substituted main chain or side chain and becomes soluble in alkaline developer by the decomposition caused by an acid, (B) a compound generating acid by actinic ray or radiation, and (C) a nitrogen compound containing ≥1 F atom. The composition gives clear pattern without development defect.

IC ICM G03F007-039
ICS C08F012-22; C08F014-26; C08F014-28; C08F016-26; C08F016-38;

C08F020-22; C08F020-28; C08F020-44; C08F032-04; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST pos photoresist fluorine nitrogen compd; alkali soluble polymer fluorine

IT Positive photoresists
(pos. photoresist containing F-containing alkali-soluble polymer, acid generator, and F-containing nitrogen compound)

IT 88-17-5 98-16-8 311-89-7 328-74-5 359-70-6 367-71-5 393-39-5 432-03-1 432-08-6 455-14-1 700-16-3 700-17-4 771-60-8 1513-65-1 2875-18-5 3048-01-9 3244-44-8 3796-24-5
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(pos. photoresist containing F-containing alkali-soluble polymer, acid generator, and F-containing nitrogen compound)

IT 143643-34-9P 262617-13-0P 370866-13-0P 370866-15-2P 397302-29-3P 430436-67-2P 430436-68-3P 430436-70-7P 430436-72-9P 430436-74-1P 430436-76-3P 430436-78-5P 430436-79-6P 430436-81-0P 430436-82-1P 430436-84-3P 430436-85-4P 430436-86-5P 430436-87-6P 430436-89-8P 430436-90-1P 430436-92-3P 430436-94-5P 430436-98-9P 430436-99-0P 430437-01-7P 430437-03-9P 430437-04-0P 430437-05-1P 430437-09-5P **430437-11-9P** 430437-12-0P 430437-13-1P 430437-17-5P 430437-18-6P 430437-19-7P 430437-21-1P 430437-22-2P 430437-24-4P 430437-27-7P 430437-29-9P 430437-33-5P 430437-36-8P 430437-37-9P 430437-39-1P 430437-40-4P 431062-12-3P 431062-14-5P 431062-16-7P 431062-17-8P 431062-18-9P 431062-20-3P 431062-22-5P 487048-93-1P 524952-65-6P 524952-66-7P 524952-68-9P 524952-69-0P 524952-70-3P 524952-71-4P 524952-72-5P 524952-73-6P 524952-74-7P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoresist containing F-containing alkali-soluble polymer, acid generator, and F-containing nitrogen compound)

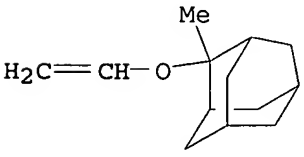
IT **430437-11-9P**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoresist containing F-containing alkali-soluble polymer, acid generator, and F-containing nitrogen compound)

RN 430437-11-9 HCAPLUS

CN 2,5-Furandione, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2-(ethenyloxy)-2-methyltricyclo[3.3.1.13,7]decane (9CI) (CA INDEX NAME)

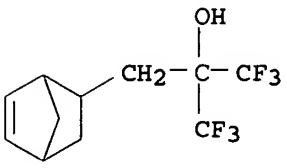
CM 1

CRN 430437-10-8
CMF C13 H20 O



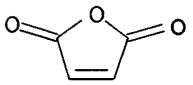

CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



CM 3

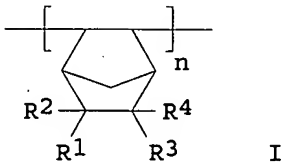
CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 16 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:366812 HCAPLUS
DN 138:369658
TI Fluorine-containing norbornene polymers and their uses for antireflective films, photosensitive coatings, and resists
IN Koga, Tadashi; Maeda, Kazuhiko
PA Central Glass Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2003137940 | A2 | 20030514 | JP 2001-339982 | 20011105 |
| PRAI JP 2001-339982 | | 20011105 | | |

GI



I

AB The polymers comprise norbornene repeating units I (R1-R4 = H, halo, C1-20 alkyl, CO2H, OH, cyano, etc.; ≥1 of R1-R4 = F-containing group) and repeating units CR5R6R7 (R5, R6 = alkyl, fluoroalkyl; R5 and/or R6 = fluoroalkyl; R7 = O, CH2). Thus, 39.70 g 3-(5-bicyclo[2.2.1]hepten-2-yl)-1,1,1-trifluoro-2-trifluoromethyl-2-propanol was polymerized with 10.30 g

(F3C)2CO to give copolymer, which was made into a film showing 650-nm light reflectance 0.98% and good weather resistance.

IC ICM C08F232-08
ICS C09D127-12; C09D145-00

CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 38, 74

ST fluoro norbornene polymer antireflective film resist; photosensitive coating fluoro norbornene polymer; fluoroacetone fluoronorbornene copolymer antireflective film

IT Polyethers, preparation
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorine-containing; manufacture of F-containing norbornene polymers for antireflective films, photosensitive coatings, and resists)

IT Coating materials
(light-sensitive; manufacture of F-containing norbornene polymers for antireflective films, photosensitive coatings, and resists)

IT Antireflective films
Photoresists
(manufacture of F-containing norbornene polymers for antireflective films, photosensitive coatings, and resists)

IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of F-containing norbornene polymers for antireflective films, photosensitive coatings, and resists)

IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether-; manufacture of F-containing norbornene polymers for antireflective films, photosensitive coatings, and resists)

IT 521947-47-7P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(comonomer; manufacture of F-containing norbornene polymers for antireflective films, photosensitive coatings, and resists)

IT 105935-24-8P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate for monomer; manufacture of F-containing norbornene polymers for antireflective films, photosensitive coatings, and resists)

IT 521949-34-8P 521949-35-9P 521949-36-0P 521949-37-1P 521949-38-2P
**521949-39-3P**
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of F-containing norbornene polymers for antireflective films, photosensitive coatings, and resists)

IT 196314-61-1P 365568-55-4P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomer; manufacture of F-containing norbornene polymers for antireflective films, photosensitive coatings, and resists)

IT 110-63-4, Butylene glycol, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for comonomer; manufacture of F-containing norbornene polymers for antireflective films, photosensitive coatings, and resists)

IT 77-73-6, Dicyclopentadiene 115-11-7, Isobutene, reactions 381-98-6, 2-Trifluoromethylacrylic acid 542-92-7, Cyclopentadiene, reactions 646-97-9, 1,1,1-Trifluoro-2-(trifluoromethyl)pent-4-en-2-ol
RL: RCT (Reactant); RACT (Reactant or reagent)

(reactant for monomer; manufacture of F-containing norbornene polymers for antireflective films, photosensitive coatings, and resists)

IT **521949-39-3P**

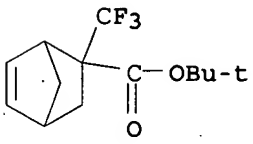
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of F-containing norbornene polymers for antireflective films, photosensitive coatings, and resists)

RN 521949-39-3 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione and 3,3,3-trifluoro-2-(trifluoromethyl)-1-propene (9CI) (CA INDEX NAME)

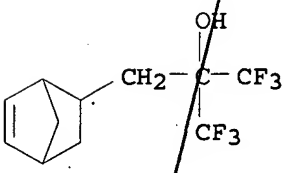
CM 1

CRN 365568-55-4
CMF C13 H17 F3 O2



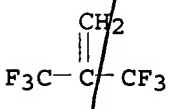
CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



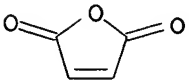
CM 3

CRN 382-10-5
CMF C4 H2 F6



CM 4

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 17 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:334607 HCAPLUS
DN 138:346488
TI Pattern formation method
IN Endo, Masayuki; Sasago, Masaru
PA Matsushita Electric Industrial Co., Ltd., Japan
SO U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

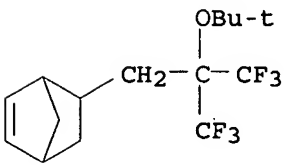
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 2003082926 | A1 | 20030501 | US 2002-279070 | 20021024 |
| US 6841488 | B2 | 20050111 | | |
| JP 2003140360 | A2 | 20030514 | JP 2001-334168 | 20011031 |
| PRAI JP 2001-334168 | A | 20011031 | | |

AB A resist film is formed from a chemical amplified resist material including a base polymer having a protecting group released by a function of an acid, an acrylic compound and an acid generator that generates an acid when irradiated with light. The resist film is selectively irradiated with exposing light for pattern exposure, and is developed after the pattern exposure so as to form a resist pattern having a hole or groove opening. The size of the opening is reduced by irradiating the resist pattern with light with annealing.

IC ICM H01L021-311
ICS H01L021-302; H01L021-461; H01L021-31; H01L021-469
INCL 438780000; 430005000; 438725000; 438710000; 438708000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST chem amplified photoresist photolithog pattern formation
IT Photolithography
Photoresists
(pattern formation method)
IT 153723-75-2, tert-Butoxystyrene-hydroxystyrene copolymer 154444-26-5, tert-Butoxycarbonyloxystyrene-hydroxystyrene copolymer 170283-35-9 177080-68-1, 2-Methyl-2-adamantyl methacrylate-mevalonic lactone methacrylate copolymer 186676-37-9 188778-57-6, tert-Butoxycarbonylmethyloxystyrene-hydroxystyrene copolymer 195000-67-0 195154-78-0 195154-83-7 250378-10-0 518027-82-2 518027-83-3 518027-84-4 518027-85-5 518027-86-6 518027-87-7 518027-88-8 **518027-89-9** 518027-90-2 518027-91-3 518027-92-4 518027-93-5 518047-92-2 518047-95-5
RL: TEM (Technical or engineered material use); USES (Uses)
(pattern formation method containing)
IT **518027-89-9**
RL: TEM (Technical or engineered material use); USES (Uses)
(pattern formation method containing)
RN 518027-89-9 HCAPLUS
CN 2,5-Furandione, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 5-[2-(1,1-dimethylethoxy)-3,3,3-trifluoro-2-(trifluoromethyl)propyl]bicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

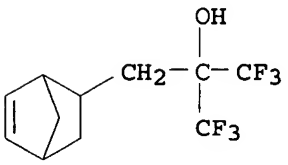
CM 1

CRN 430436-83-2
CMF C15 H20 F6 O



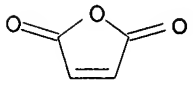
CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



CM 3

CRN 108-31-6
CMF C4 H2 O3



RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 18 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:282017 HCAPLUS
DN 138:311568
TI Chemical amplification type positive resist composition
IN Takata, Yoshiyuki; Fujishima, Hiroaki; Uetani, Yasunori
PA Japan
SO U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 2003068573 | A1 | 20030410 | US 2002-207997 | 20020731 |
| | TW 573229 | B | 20040121 | TW 2002-91117263 | 20020730 |
| | JP 2003114523 | A2 | 20030418 | JP 2002-224526 | 20020801 |

PRAI JP 2001-234649 A 20010802
OS MARPAT 138:311568
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

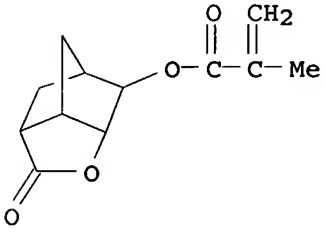
AB A chemical amplification type pos. photoresist composition is provided which gives resist patterns showing remarkably improved line edge roughness. A chemical amplification type pos. photoresist composition comprises an acid generator containing a benzenesulfonate ion of I (Q1-5 = H, hydroxyl group, perfluoroalkyl group, alkyl group, alkoxy group, halogen); and a resin having a polymerization unit carrying a group unstable to an acid and polymerization unit of an alicyclic lactone of formula II, III (R1-4 = H, Me group; n = 1-3).

IC ICM G03F007-004
INCL 430270100; 430914000; 430921000; 430910000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST chem amplification pos photoresist compn
IT Positive photoresists
(chemical amplification type pos. resist composition)
IT 509097-29-4P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acid generation for chemical amplification type pos. resist composition)
IT 197447-16-8 247150-86-3 335199-99-0, Triphenylsulfonium 2,4-difluorobenzenesulfonate 509097-30-7 509097-32-9
RL: TEM (Technical or engineered material use); USES (Uses)
(acid generation for chemical amplification type pos. resist composition)
IT 407-25-0, Trifluoroacetic anhydride 945-51-7, Diphenyl sulfoxide 1493-13-6, Trifluoromethanesulfonic acid 27176-87-0, Dodecylbenzenesulfonic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of acid generation for chemical amplification type pos. resist composition)
IT 3744-09-0P 29299-40-9P, Silver dodecylbenzenesulfonate 81416-37-7P, 4-Methylphenyldiphenylsulfonium trifluoromethanesulfonate
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of acid generation for chemical amplification type pos. resist composition)
IT **509097-33-0P**
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin; acid generation for chemical amplification type pos. resist composition)
IT 340964-31-0P 364736-22-1P 364736-29-8P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin; chemical amplification type pos. resist composition containing)
IT **509097-33-0P**
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin; acid generation for chemical amplification type pos. resist composition)
RN 509097-33-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione and hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

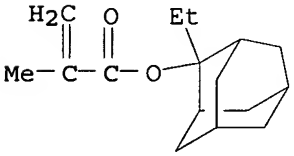
CM 1

CRN 254900-07-7
CMF C12 H14 O4



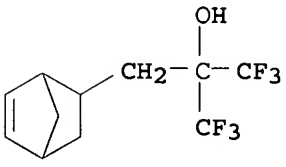
CM 2

CRN 209982-56-9
CMF C16 H24 O2



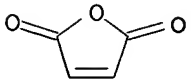
CM 3

CRN 196314-61-1
CMF C11 H12 F6 O



CM 4

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 19 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:241052 HCAPLUS
DN 138:262693
TI Positive photoresist composition
IN Fujimori, Toru; Kawabe, Yasumasa
PA Fuji Photo Film Co., Ltd., Japan
SO Eur. Pat. Appl., 101 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | EP 1296190 | A1 | 20030326 | EP 2002-21204 | 20020918 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK | | | | |
| | JP 2003167333 | A2 | 20030613 | JP 2002-563 | 20020107 |
| | US 2003134225 | A1 | 20030717 | US 2002-244070 | 20020916 |
| PRAI | JP 2001-285180 | A | 20010919 | | |
| | JP 2002-563 | A | 20020107 | | |

AB A pos. resist composition comprises the components of: (A) a compound capable of generating an acid upon irradiation with one of an actinic ray and a radiation; (B) a resin that is insol. or slightly soluble in alkalis, but becomes alkali-soluble under an action of an acid; (C) a basic compound; and (D) a compound comprising at least three hydroxyl groups or at least three substituted hydroxyl groups, and comprising at least one cyclic structure. The present invention relates to a pos. resist composition used in a process of manufacture semiconductors and which far UV light with wavelengths ≤ 250 nm is used as an exposure light source or an electron beam is used as an irradiation source.

IC ICM G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76
ST pos photoresist compn
IT Positive photoresists
(pos. photoresist composition)
IT Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; pos. photoresist composition containing)
IT 24979-70-2DP, VP15000, reaction product with Et vinyl ether 129674-22-2P
159296-87-4P 177034-73-0P 177034-75-2P 199432-82-1P 200808-68-0P
228101-60-8P 250378-10-0P, Butyrolactone methacrylate-2-ethyl-2-adamantylmethacrylate copolymer 262617-13-0P 288303-55-9P
288620-13-3P 288620-15-5P 289706-85-0P 325143-38-2P 326591-96-2P
364736-22-1P 372968-15-5P 391232-36-3P 398140-38-0P 398140-43-7P
398140-45-9P 398140-47-1P 398140-50-6P 398140-52-8P 398140-55-1P
398140-57-3P 398140-59-5P 398140-64-2P 398140-69-7P 398140-73-3P
398140-77-7P 398140-78-8P 398140-79-9P 398140-81-3P 398140-86-8P
398140-87-9P 398140-88-0P 398140-89-1P 398140-94-8P 398141-00-9P
398141-11-2P 398141-13-4P 398141-14-5P 405509-18-4P 430436-66-1P
430436-67-2P 430436-68-3P 430436-70-7P 430436-72-9P 430436-74-1P
430436-76-3P 430436-78-5P 430436-79-6P 430436-81-0P 430436-82-1P

430436-84-3P 430436-85-4P 430436-86-5P 430436-87-6P 430436-89-8P
430436-90-1P 430436-91-2P 430436-92-3P 430436-94-5P 430436-95-6P
430436-97-8P 430436-98-9P 430436-99-0P 430437-09-5P
**430437-11-9P** 430437-12-0P 430437-13-1P 430437-14-2P
430437-15-3P 430437-17-5P 430437-18-6P 430437-19-7P 430437-21-1P
430437-22-2P 430437-24-4P 431062-12-3P 431062-14-5P 431062-16-7P
431062-17-8P 503003-64-3P 503003-65-4P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoresist composition containing)

IT 109-92-2DP, Ethyl vinyl ether, reaction product with polyhydroxystyrene
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoresist composition containing)

IT 57-55-6, Propylene glycol, uses 67-68-5, Dimethyl sulfoxide, uses 96-48-0, γ-Butyrolactone 97-64-3, Ethyl lactate 107-21-1, Ethylene glycol, uses 108-94-1, Cyclohexanone, uses 109-86-4, Ethylene glycol monomethyl ether 110-43-0, 2-Heptanone 110-80-5, Ethylene glycol monoethyl ether 123-86-4, Butyl ac-etate 127-19-5, N,N-Dimethylacetamide 763-69-9 872-50-4, N-Methylpyrrolidone, uses 1320-67-8, Propylene glycol monomethyl ether 52125-53-8, Propylene glycol monoethyl ether 84540-57-8, Propylene glycol monomethyl ether acetate
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent; pos. photoresist composition containing)

IT 137462-24-9, Megafac F176 216679-67-3, Megafac R08
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; pos. photoresist composition containing)

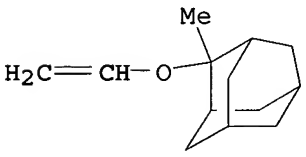
IT **430437-11-9P**
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoresist composition containing)

RN 430437-11-9 HCAPLUS

CN 2,5-Furandione, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2-(ethenyloxy)-2-methyltricyclo[3.3.1.13,7]decane (9CI) (CA INDEX NAME)

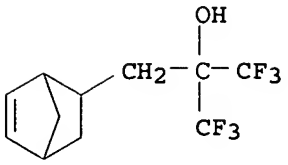
CM 1

CRN 430437-10-8
CMF C13 H20 O



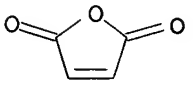

CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



CM 3

CRN 108-31-6
CMF C4 H2 O3



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 20 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:111386 HCAPLUS
DN 138:145076
TI Chemically amplified positive-working photoresist composition
IN Araki, Kaori; Kuwana, Koji; Uetani, Yasunori
PA Sumitomo Chemical Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2003043689 | A2 | 20030213 | JP 2001-234648 | 20010802 |
| PRAI JP 2001-234648 | | 20010802 | | |

AB Title resist composition, suitable for use in ArF or KrF excimer laser lithog. and having good balance of resolution and sensitivity, comprises an acid-forming agent and an alkali-insol. resin component which contains structural units derived from monomer ACH2(CR1R2)nCR3R4OH (A = 2-norbornen-5-yl; n = 0-4; R1, R2 = H, C1-4 alkyl; R3, R4 = C1-6 alkyl including at least one fluorine-substituted alkyl) and is becomes soluble in alkali by reacting with an acid.
IC ICM G03F007-039
ICS C08F032-04; G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST chem amplified pos working photoresist excimer laser lithog; photosensitive acid generator pos working photoresist
IT Positive photoresists
(chemical amplified pos.-working photoresist composition containing photosensitive acid generator)
IT 177034-80-9
RL: MOA (Modifier or additive use); USES (Uses)
(acid-forming agent; chemical amplified pos.-working photoresist composition containing photosensitive acid generator)

IT **492470-60-7P**
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(chemical amplified pos.-working photoresist composition containing photosensitive acid generator)

IT 196314-61-1P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation of chemical amplified pos.-working photoresist composition containing photosensitive acid generator)

IT 542-92-7, Cyclopentadiene, reactions 646-97-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of chemical amplified pos.-working photoresist composition containing photosensitive acid generator)

IT 24544-04-5, 2,6-Diisopropylaniline
RL: MOA (Modifier or additive use); USES (Uses)
(quencher; chemical amplified pos.-working photoresist composition containing photosensitive acid generator)

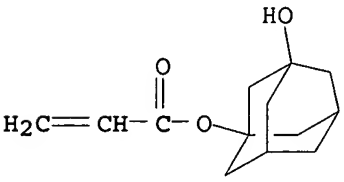
IT **492470-60-7P**
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(chemical amplified pos.-working photoresist composition containing photosensitive acid generator)

RN 492470-60-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione and 3-hydroxytricyclo[3.3.1.13,7]dec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

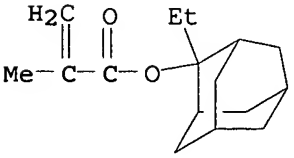
CM 1

CRN 216581-76-9
CMF C13 H18 O3



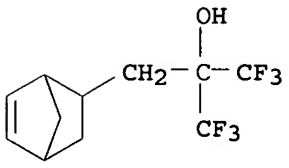

CM 2

CRN 209982-56-9
CMF C16 H24 O2



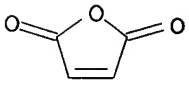
CM 3

CRN 196314-61-1
CMF C11 H12 F6 O



CM 4

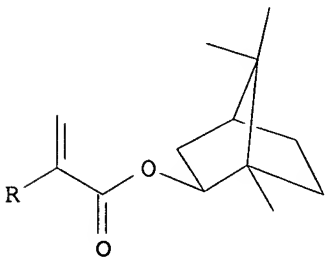
CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 21 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:110930 HCAPLUS
DN 138:178230
TI Fluorine-containing bicycloheptyl acrylates, their manufacture, their transparent polymers, and photoresists and antireflective materials using them
IN Kakuta, Shinichi; Komoritani, Haruhiko; Maeda, Kazuhiko
PA Central Glass Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2003040926 | A2 | 20030213 | JP 2001-226582 | 20010726 |
| PRAI JP 2001-226582 | | 20010726 | | |

OS MARPAT 138:178230
GI



I

AB The invention relates to F-containing acrylates I (R = F, C1-10-fluorohydrocarbyl). The polymers may comprise other acrylates, norbornenes, styrene derivs., or vinyl ethers.

IC ICM C08F020-22
ICS C07C067-04; C07C069-653; G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST bicycloheptyl acrylate fluoropolymer photoresist transparency; antireflective film display bicycloheptyl acrylate fluoropolymer

IT Antireflective films
Photoresists
Transparent materials
(F-containing bicycloheptyl acrylates for transparent polymers for photoresists and antireflective films)

IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acrylic; F-containing bicycloheptyl acrylates for transparent polymers for photoresists and antireflective films)

IT 496954-69-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(F-containing bicycloheptyl acrylates for transparent polymers for photoresists and antireflective films)

IT 496954-70-2P 496954-71-3P 496954-72-4P **496954-73-5P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(F-containing bicycloheptyl acrylates for transparent polymers for photoresists and antireflective films)

IT 79-92-5, Camphene 381-98-6, 2-Trifluoromethyl acrylic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(F-containing bicycloheptyl acrylates for transparent polymers for photoresists and antireflective films)

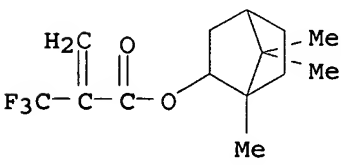
IT **496954-73-5P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(F-containing bicycloheptyl acrylates for transparent polymers for photoresists and antireflective films)

RN 496954-73-5 HCAPLUS

CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 2,5-furandione and 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl 2-(trifluoromethyl)-2-propenoate (9CI) (CA INDEX NAME)

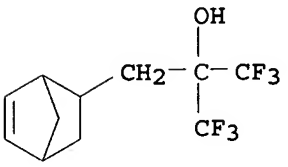
CM 1

CRN 496954-69-9
CMF C14 H19 F3 O2



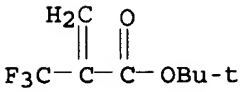
CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



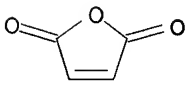
CM 3

CRN 105935-24-8
CMF C8 H11 F3 O2



CM 4

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 22 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:907052 HCAPLUS
DN 138:9662
TI Negative photoresist composition for a method for fabricating a semiconductor device
IN Kozawa, Miwa; Nozaki, Koji; Watanabe, Keiji; Yano, Ei
PA Fujitsu Limited, Japan
SO U.S. Pat. Appl. Publ., 24 pp., Cont.-in-part of U.S. Ser. No. 785,306.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 2002177070 | A1 | 20021128 | US 2002-97818 | 20020315 |
| | US 2001036594 | A1 | 20011101 | US 2001-785306 | 20010220 |
| | JP 2001343748 | A2 | 20011214 | JP 2001-93727 | 20010328 |
| PRAI | JP 2000-89790 | A | 20000328 | | |
| | US 2001-785306 | A2 | 20010220 | | |
| | JP 2001-93727 | A | 20010328 | | |

GI

I

AB The present invention relates to a neg. photoresist composition containing an alkaline-soluble resin as a base material, in which an oxetane structure represented by I is contained in a structure of the alkaline-soluble resin or in a structure of a compound used in combination with the alkaline-soluble resin.

IC ICM G03F007-038
ICS G03F007-075; G03F007-004; G03F007-11; G03F007-36; G03F007-30; G03F007-40

INCL 430270100; 430271100; 430325000; 430326000; 430311000; 430313000

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76

ST eg resist compn pattern fabricating semiconductor device photolithog

IT Photolithography
Semiconductor device fabrication
(neg. photoresist composition for method for)

IT Photoresists
(neg. photoresist composition for method for fabricating semiconductor device)

IT 343615-46-3P 370588-70-8P 477327-40-5P 477327-41-6P 477327-43-8P
477327-44-9P 477327-45-0P 477327-47-2P **477327-49-4P**
477327-50-7P 477327-51-8P 477327-52-9P 477327-54-1P 477327-55-2P
477327-63-2P 477327-73-4P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(neg. photoresist composition for method for fabricating semiconductor device containing)

IT 138517-49-4 402751-39-7
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(neg. photoresist composition for method for fabricating semiconductor device containing)

IT 59269-51-1, Poly(hydroxystyrene)
RL: TEM (Technical or engineered material use); USES (Uses)
(neg. photoresist composition for method for fabricating semiconductor device containing)

IT **477327-49-4P**
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(neg. photoresist composition for method for fabricating semiconductor device containing)

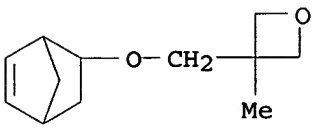
RN 477327-49-4 HCAPLUS

CN 2,5-Furandione, polymer with 3-[(bicyclo[2.2.1]hept-5-en-2-yloxy)methyl]-3-methyloxetane and α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol (9CI) (CA INDEX NAME)

CM 1

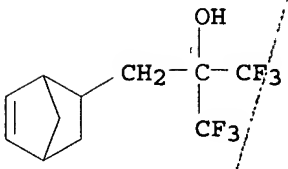
CRN 477327-48-3

CMF C12 H18 O2



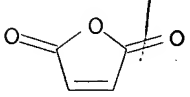
CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



CM 3

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 23 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:392162 HCAPLUS
DN 136:409022
TI Positive resist composition
IN Aoai, Toshiaki; Yasunami, Shoichiro; Mizutani, Kazuyoshi; Kanna, Shinichi
PA Fuji Photo Film Co., Ltd., Japan
SO U.S. Pat. Appl. Publ., 56 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 2002061464 | A1 | 20020523 | US 2001-961281 | 20010925 |
| | US 6852467 | B2 | 20050208 | | |
| | JP 2002333715 | A2 | 20021122 | JP 2001-202298 | 20010703 |
| | TW 528931 | B | 20030421 | TW 2001-90123599 | 20010925 |
| PRAI | JP 2000-292537 | A | 20000926 | | |
| | JP 2000-379284 | A | 20001213 | | |
| | JP 2001-62158 | A | 20010306 | | |
| | JP 2001-202298 | A | 20010703 | | |

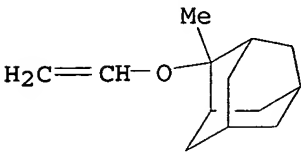
AB The present invention relates to a pos. resist composition comprising: (A) a

fluorine group-containing resin having at least one fluorine atom on at least one of the main chain and the side chain of the polymer skeleton; and having a group capable of decomposing under the action of an acid to increase the solubility in an alkali developer; (B) a compound capable of generating an acid upon irradiation with one of actinic ray and radiation; and (C) a surfactant containing at least one of a silicon atom and a fluorine atom. The present invention provides a pos. photoresist composition suitable for use in the microlithog. process in the production of VLSI or high-capacity microchip, or in other photo-fabrication processes. The invention pos. photoresist composition is capable of forming a highly definite pattern using a vacuum UV ray of < 160 nm.

IC ICM G03F007-004
INCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76
ST photoresist fluorine contg resin compn surfactant photolithog UV
IT Surfactants
(fluorine group-containing pos. resist composition containing)
IT Positive photoresists
(fluorine group-containing resin for pos. resist composition)
IT Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; fluorine group-containing pos. resist composition containing)
IT Photolithography
(vacuum UV; fluorine group-containing resin for pos. resist composition for)
IT 262617-13-0P 430436-66-1P 430436-67-2P 430436-68-3P 430436-70-7P
430436-72-9P 430436-74-1P 430436-76-3P 430436-78-5P 430436-79-6P
430436-81-0P 430436-82-1P 430436-84-3P 430436-85-4P 430436-86-5P
430436-87-6P 430436-89-8P 430436-90-1P 430436-91-2P 430436-92-3P
430436-94-5P 430436-95-6P 430436-97-8P 430436-98-9P 430436-99-0P
430437-01-7P 430437-03-9P 430437-04-0P 430437-05-1P 430437-07-3P
430437-09-5P **430437-11-9P** 430437-12-0P 430437-13-1P
430437-14-2P 430437-15-3P 430437-17-5P 430437-18-6P 430437-19-7P
430437-21-1P 430437-22-2P 430437-24-4P 430437-26-6P 430437-27-7P
430437-29-9P 430437-30-2P 430437-32-4P 430437-33-5P 430437-34-6P
430437-35-7P 430437-36-8P 430437-37-9P 430437-38-0P 430437-39-1P
430437-40-4P 430437-42-6P 430437-44-8P 430437-46-0P 431062-12-3P
431062-14-5P 431062-16-7P 431062-17-8P 431062-18-9P 431062-20-3P
431062-22-5P 431062-24-7P 431062-25-8P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorine group-containing resin for pos. resist composition)
IT 144317-44-2, Triphenylsulfonium nonaflate
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; fluorine group-containing pos. resist composition containing)
IT 9016-45-9, Polyoxyethylene nonylphenyl ether 137462-24-9, Megafac F176
216679-67-3, Megafac R08
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; fluorine group-containing pos. resist composition containing)
IT **430437-11-9P**
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorine group-containing resin for pos. resist composition)
RN 430437-11-9 HCAPLUS
CN 2,5-Furandione, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2-(ethenyloxy)-2-methyltricyclo[3.3.1.13,7]decane (9CI) (CA INDEX NAME)

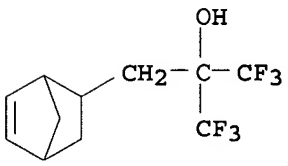
CM 1

CRN 430437-10-8
CMF C13 H20 O



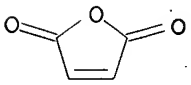
CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



CM 3

CRN 108-31-6
CMF C4 H2 O3



RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 24 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:169230 HCAPLUS
DN 136:224210
TI Negative resist composition and photolithographic process for manufacturing of electronic devices
IN Nozaki, Koji; Yano, Ei; Kozawa, Miwa
PA Fujitsu Limited, Japan
SO Eur. Pat. Appl., 47 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | EP 1184723 | A2 | 20020306 | EP 2001-307380 | 20010830 |
| | EP 1184723 | A3 | 20030917 | | |

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, SI, LT, LV, FI, RO

| | | | | | |
|---|---|---|---|---|---|
| | JP 2002148805 | A2 | 20020522 | JP 2001-168630 | 20010604 |
| | US 2002058197 | A1 | 20020516 | US 2001-935832 | 20010824 |
| | US 6770417 | B2 | 20040803 | | |
| | TW 227813 | B1 | 20050211 | TW 2001-90121326 | 20010829 |
| PRAI | JP 2000-266041 | A | 20000901 | | |
| | JP 2001-168630 | A | 20010604 | | |

AB A neg. resist composition is provided which comprises at least a constituent component which has a vinyl ether structure protected with an acetal in a mol. In the formation of neg. resist patterns, an aqueous basic solution can be used without swelling. A process is also provided for forming a resist pattern, which comprises the steps of: applying a neg. resist composition comprising at least a constituent component which has a vinyl ether structure protected with an acetal in a mol., on a treated substrate; selectively exposing the formed resist film to imaging radiation capable of provoking decomposition of a photoacid generator of the resist composition, and developing the exposed resist film with an aqueous basic solution A process is also provided for manufacturing an electronic device, which comprises the step of selectively removing an underlying treated substrate using a resist pattern, formed from the above-mentioned process, as a masking means to form a predetd. functional element layer.

IC ICM G03F007-075

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76

ST neg photoresist compn photolithog UV MOS transistor fabrication; magnetic recording head fabrication neg photoresist compn photolithog UV; semiconductor device fabrication magnetic recording head MOS transistor photolithog

IT Photolithography
(UV; neg. resist composition and photolithog. process for fabrication of MOS transistors and thin-film magnetic heads)

IT MOS transistors
Magnetic recording heads
Negative photoresists
Semiconductor device fabrication
(neg. resist composition and photolithog. process for fabrication of MOS transistors and thin-film magnetic heads)

IT Polysiloxanes, properties
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(neg. resist composition and photolithog. process for fabrication of MOS transistors and thin-film magnetic heads)

IT 33693-68-4DP, reaction products with 2-cyanoethyltrichlorosilane hydrolytic homopolymer 181036-41-9DP, 2-Cyanoethyltrichlorosilane hydrolytic homopolymer, reaction products with 2(3H)-Furanone, 3-bromodihydro-4-methyl- and 2-methoxy-6-bromomethyltetrahydropyran 402751-01-3P 402751-04-6P 402751-07-9P 402751-09-1P 402751-11-5P 402751-17-1P **402751-22-8P** 402751-28-4P 402751-34-2P 402751-50-2P 402751-54-6P 402751-56-8P 402751-59-1DP, reaction products with 2-cyanoethyltrichlorosilane hydrolytic homopolymer 402755-85-5P 402758-23-0P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(neg. resist composition and photolithog. process for fabrication of MOS transistors and thin-film magnetic heads)

IT 402751-39-7 402751-45-5
RL: TEM (Technical or engineered material use); USES (Uses)
(neg. resist composition and photolithog. process for fabrication of MOS transistors and thin-film magnetic heads)

IT 96-48-0, γ-Butyrolactone 97-64-3, Ethyl lactate
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent; neg. resist composition and photolithog. process for fabrication of MOS transistors and thin-film magnetic heads)

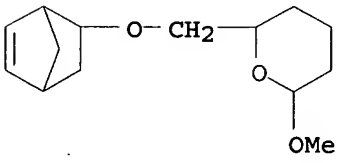
IT **402751-22-8P**
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(neg. resist composition and photolithog. process for fabrication of MOS transistors and thin-film magnetic heads)

RN 402751-22-8 HCAPLUS

CN 2,5-Furandione, polymer with 2-[(bicyclo[2.2.1]hept-5-en-2-yloxy)methyl]tetrahydro-6-methoxy-2H-pyran and α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol (9CI) (CA INDEX NAME)

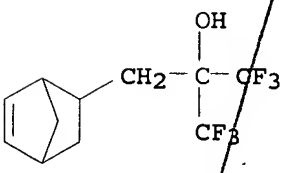
CM 1

CRN 402751-21-7
CMF C14 H22 O3



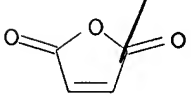

CM 2

CRN 196314-61-1
CMF C11 H12 F6 O




CM 3

CRN 108-31-6
CMF C4 H2 O3




L8 ANSWER 25 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:918945 HCAPLUS
DN 136:45683

TI Radiation-sensitive resin composition for chemical amplified resist
IN Nishimura, Yukio; Yamahara, Noboru; Yamamoto, Masafumi; Kajita, Toru; Shimokawa, Tsutomu; Ito, Hiroshi
PA JSR Corporation, Japan; International Business Machines Corporation
SO Eur. Pat. Appl., 63 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | EP 1164434 | A2 | 20011219 | EP 2001-114503 | 20010615 |
| | EP 1164434 | A3 | 20041222 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | JP 2002072484 | A2 | 20020312 | JP 2001-108824 | 20010406 |
| | US 2002009668 | A1 | 20020124 | US 2001-879894 | 20010614 |
| | US 6800414 | B2 | 20041005 | | |
| | SG 100729 | A1 | 20031226 | SG 2001-3498 | 20010614 |
| | CN 1332205 | A | 20020123 | CN 2001-124927 | 20010615 |
| | TW 536661 | B | 20030611 | TW 2001-90114559 | 20010615 |
| | US 2004241580 | A1 | 20041202 | US 2004-867892 | 20040616 |
| | US 6964840 | B2 | 20051115 | | |
| PRAI | JP 2000-182297 | A | 20000616 | | |
| | JP 2001-108824 | A | 20010406 | | |
| | US 2001-879894 | A1 | 20010614 | | |

OS MARPAT 136:45683
AB A radiation-sensitive resin composition comprising an acid-labile group-containing resin and a photoacid generator is disclosed. The resin has a structure of X1R2COR1 (R1 = H, monovalent acid-labile group, C1-6 alkyl which does not have an acid-labile group, C2-7 alkylcarbonyl which does not have an acid-labile group; X1 = C1-4 fluorinated alkyl; and R2 = H, C1-10 alkyl, C1-10 fluorinated alkyl). The resin composition exhibits high transmittance of radiation, high sensitivity, resolution, and pattern shape, and is useful as a chemical amplified resist in producing semiconductors at a high yield.
IC ICM G03F007-004
ICS G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76
ST chem amplified radiation electron beam photoresist microfabrication
IT Photoresists
(acid-labile group-containing resin for radiation-sensitive resist composition)
IT Polyalkenamers
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acid-labile group-containing resin for radiation-sensitive resist composition)
IT Semiconductor device fabrication
(radiation-sensitive resist composition for)
IT 1116-76-3, Tri-n-octylamine 2052-49-5, Tetra-n-butylammoniumhydroxide 4847-93-2, 3-Piperidino-1,2-propanediol 193810-83-2, N-tert-Butoxycarbonyl-2-phenylbenzimidazole 330576-56-2, N-tert-Butoxycarbonyldicyclohexylamine
RL: TEM (Technical or engineered material use); USES (Uses)
(acid diffusion control agent for radiation-sensitive resist composition)
IT 144317-44-2, Triphenylsulfonium nonafluoro-n-butanesulfonate 194999-85-4 213740-80-8 307531-76-6 330576-58-4 380886-84-0
RL: TEM (Technical or engineered material use); USES (Uses)
(acid generator for radiation-sensitive resist composition)
IT 370099-14-2P 370102-83-3P 380886-62-4P **380886-63-5P**

**380886-66-8P 380886-68-0P 380886-69-1P**
**380886-70-4P 380886-71-5P** 380886-72-6DP, hydrogenated
380886-72-6P 380886-73-7DP, hydrogenated 380886-74-8DP, hydrogenated
380886-74-8P 380886-75-9DP, hydrogenated 380886-76-0DP, hydrogenated
380886-76-0P 380886-77-1DP, hydrogenated **380886-78-2P**
**380886-79-3P 380886-80-6P** 380886-81-7P 380886-82-8P
380886-83-9P 380915-67-3P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acid-labile group-containing resin for radiation-sensitive resist composition)

IT 157692-53-0, tert-Butyl deoxycholate 169228-97-1, Di-tert-butyl 1,3-adamantanedicarboxylate 231296-44-9, t-Butoxycarbonylmethyldeoxycholate 296242-01-8
RL: TEM (Technical or engineered material use); USES (Uses)
(alicyclic additive for radiation-sensitive resist composition)

IT 77-73-6, Dicyclopentadiene 542-92-7, Cyclopentadiene, reactions 646-97-9, 1,1-Bis(trifluoromethyl)-3-buten-1-ol 5292-43-3, tert-Butyl bromoacetate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of acid-labile group-containing resin for radiation-sensitive resist composition)

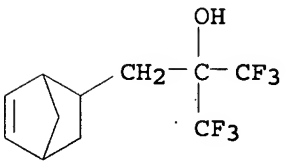
IT 196314-61-1P 196314-63-3P 365533-00-2P 380886-59-9P 380886-60-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of acid-labile group-containing resin for radiation-sensitive resist composition)

IT **380886-63-5P 380886-66-8P 380886-68-0P**
**380886-69-1P 380886-70-4P 380886-71-5P**
**380886-78-2P 380886-79-3P 380886-80-6P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acid-labile group-containing resin for radiation-sensitive resist composition)

RN 380886-63-5 HCAPLUS
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2,5-furandione (9CI) (CA INDEX NAME)

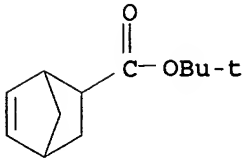
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



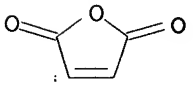

CM 2

CRN 154970-45-3
CMF C12 H18 O2



CM 3

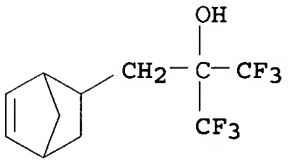
CRN 108-31-6
CMF C4 H2 O3



RN 380886-66-8 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2,5-furandione (9CI) (CA INDEX NAME)

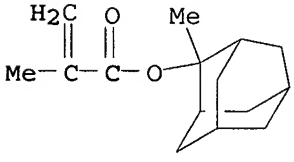
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



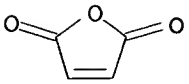
CM 2

CRN 177080-67-0
CMF C15 H22 O2



CM 3

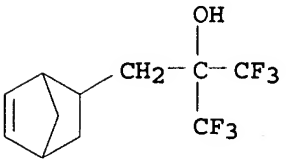
CRN 108-31-6
CMF C4 H2 O3



RN 380886-68-0 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2,5-furandione (9CI) (CA INDEX NAME)

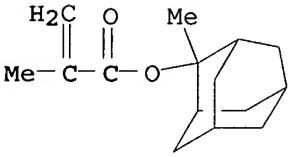
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



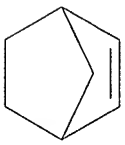
CM 2

CRN 177080-67-0
CMF C15 H22 O2



CM 3

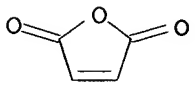
CRN 498-66-8
CMF C7 H10



CM 4

CRN 108-31-6

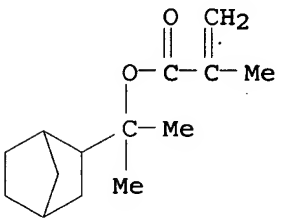
CMF C4 H2 O3



RN 380886-69-1 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-bicyclo[2.2.1]hept-2-yl-1-methylethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2,5-furandione (9CI) (CA INDEX NAME)

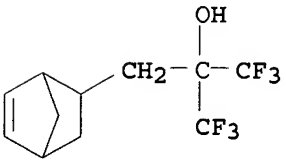
CM 1

CRN 342014-18-0
CMF C14 H22 O2



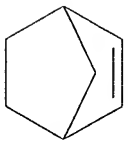
CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



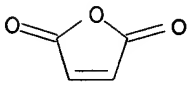
CM 3

CRN 498-66-8
CMF C7 H10



CM 4

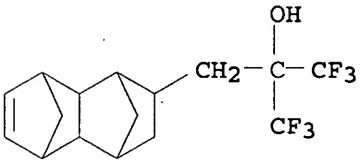
CRN 108-31-6
CMF C4 H2 O3



RN 380886-70-4 HCAPLUS
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione and 1,2,3,4,4a,5,8,8a-octahydro-α,α-bis(trifluoromethyl)-1,4:5,8-dimethanonaphthalene-2-ethanol (9CI) (CA INDEX NAME)

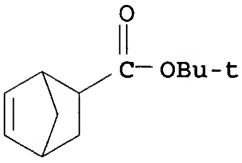
CM 1

CRN 365533-00-2
CMF C16 H18 F6 O



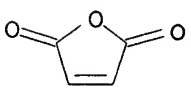
CM 2

CRN 154970-45-3
CMF C12 H18 O2



CM 3

CRN 108-31-6
CMF C4 H2 O3

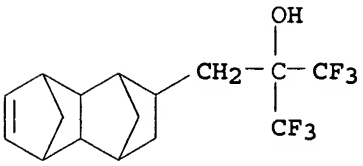


RN 380886-71-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-bicyclo[2.2.1]hept-2-yl-1-methylethyl

ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1,2,3,4,4a,5,8,8a-octahydro-α,α-bis(trifluoromethyl)-1,4:5,8-dimethanonaphthalene-2-ethanol (9CI) (CA INDEX NAME)

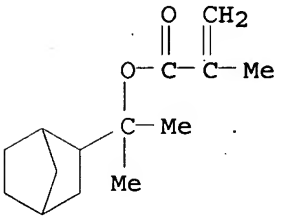
CM 1

CRN 365533-00-2
CMF C16 H18 F6 O



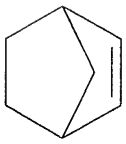
CM 2

CRN 342014-18-0
CMF C14 H22 O2



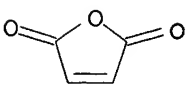
CM 3

CRN 498-66-8
CMF C7 H10



CM 4

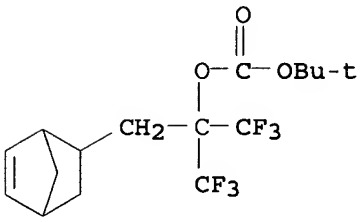
CRN 108-31-6
CMF C4 H2 O3



RN 380886-78-2 HCAPLUS
CN Carbonic acid, 1-(bicyclo[2.2.1]hept-5-en-2-ylmethyl)-2,2,2-trifluoro-1-(trifluoromethyl)ethyl 1,1-dimethylethyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2,5-furandione (9CI) (CA INDEX NAME)

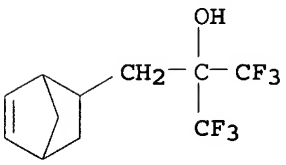
CM 1

CRN 196314-63-3
CMF C16 H20 F6 O3



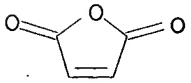
CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



CM 3

CRN 108-31-6
CMF C4 H2 O3

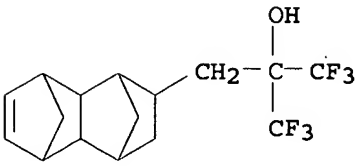


RN 380886-79-3 HCAPLUS
CN Carbonic acid, 1-(bicyclo[2.2.1]hept-5-en-2-ylmethyl)-2,2,2-trifluoro-1-(trifluoromethyl)ethyl 1,1-dimethylethyl ester, polymer with 2,5-furandione and 1,2,3,4,4a,5,8,8a-octahydro-α,α-bis(trifluoromethyl)-1,4:5,8-dimethanonaphthalene-2-ethanol (9CI) (CA INDEX NAME)

CM 1

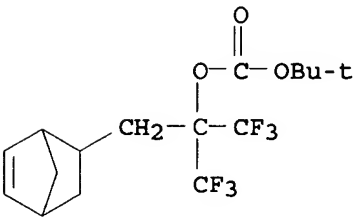
CRN 365533-00-2

CMF C16 H18 F6 O



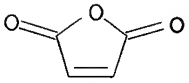
CM 2

CRN 196314-63-3
CMF C16 H20 F6 O3



CM 3

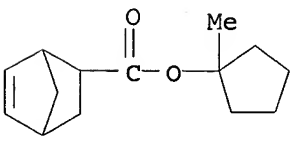
CRN 108-31-6
CMF C4 H2 O3



RN 380886-80-6 HCAPLUS
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methylcyclopentyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol and 2,5-furandione (9CI) (CA INDEX NAME)

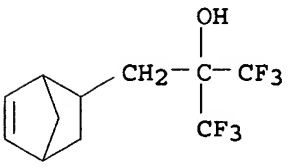
CM 1

CRN 369648-89-5
CMF C14 H20 O2



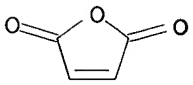
CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



CM 3

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 26 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:636379 HCAPLUS
DN 135:218727
TI Resist materials for 157-nm lithography
IN Fedynyshyn, Theodore H.
PA Massachusetts Institute of Technology, Inc., USA
SO PCT Int. Appl., 43 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2001063362 | A2 | 20010830 | WO 2001-US5907 | 20010226 |
| | WO 2001063362 | A3 | 20020307 | | |
| | W: CA, JP | | | | |
| | RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR | | | | |
| | US 6468712 | B1 | 20021022 | US 2000-513792 | 20000225 |
| | EP 1257880 | A2 | 20021120 | EP 2001-911149 | 20010226 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR | | | | |
| | JP 2003524211 | T2 | 20030812 | JP 2001-562262 | 20010226 |
| | US 2003157431 | A1 | 20030821 | US 2002-271807 | 20021016 |
| | US 6815145 | B2 | 20041109 | | |
| PRAI | US 2000-513792 | A | 20000225 | | |
| | WO 2001-US5907 | W | 20010226 | | |

AB The invention relates to photoresist materials useful in microlithog. and to improved materials and methods for pattern formation on semiconductor wafers. A radiation sensitive resin composition including a photo-acid generator and an aliphatic polymer having ≥1 electron withdrawing groups adjacent to or attached to a C atom bearing a protected hydroxyl group, wherein the protecting group is labile in the presence of in situ generated acid is described. The radiation sensitive resin composition can be

used as a resist suitable for image transfer by plasma etching and enable 1 to obtain an etching image having high precision with high reproducibility with a high degree of resolution and selectivity.

IC ICM G03F007-00

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST resist 157 nm lithog

IT Lithography
Photoresists
(pos. photoresist composition for 157-nm lithog. using)

IT 25211-99-8D, functional-group protected 25568-84-7D, Cyclopentadiene homopolymer, reaction products with hexafluoroacetone, functional-group protected 219552-58-6D, functional-group protected 357397-03-6 357397-04-7D, functional-group protected 357397-05-8D, functional-group protected 357397-06-9D, functional-group protected 357397-07-0D, functional-group protected 357397-08-1D, functional-group protected **357397-09-2D**, functional-group protected 357397-11-6D, functional-group protected 357397-12-7D, functional-group protected
RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(pos. photoresist composition for 157-nm lithog. using)

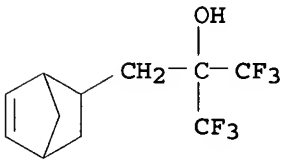
IT **357397-09-2D**, functional-group protected
RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(pos. photoresist composition for 157-nm lithog. using)

RN 357397-09-2 HCAPLUS

CN 2,5-Furandione, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol (9CI) (CA INDEX NAME)

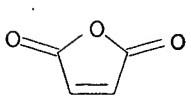
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



CM 2

CRN 108-31-6
CMF C4 H2 O3



L8 ANSWER 27 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:806316 HCAPLUS

DN 134:200382

TI Negative-tone 193-nm resists

AU Cho, Sungseo; Vander Heyden, Anthony; Byers, Jeffrey D.; Willson, C. Grant
CS Univ. of Texas at Austin, Austin, TX, USA
SO Proceedings of SPIE-The International Society for Optical Engineering (2000), 3999(Pt. 1, Advances in Resist Technology and Processing XVII), 62-73
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
AB A great deal of progress has been made in the design of single layer pos. tone resists for 193 nm lithog. Com. samples of such materials are now available from many vendors. The patterning of certain levels of devices profits from the use of neg. tone resists. There have been several reports of work directed toward the design of neg. tones resists for 193 nm exposure but, none have performed as well as the pos. tone systems. Polymers with alicyclic structures in the backbone have emerged as excellent platforms from which to design pos. tone resists for 193 nm exposure. The authors report the adaptation of this class of polymers to the design of high performance neg. tone 193 nm resists. New systems have been prepared that are based on a polarity switch mechanism for modulation of the dissoln. rate. The systems are based on a polar, alicyclic polymer backbone that includes a monomer bearing a glycol pendant group that undergoes the acid catalyzed pinacol rearrangement upon exposure and bake to produce the corresponding less polar ketone. This monomer was copolymd. with maleic anhydride and a norbornene bearing a bis-trifluoromethylcarbinol. The rearrangement of the copolymer was monitored by FT-IR as a function of temperature The synthesis of the norbornene monomers will be presented together with characterization of copolymers of these monomers with maleic anhydride. The lithog. performance of the new resist system will also be presented.
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST lithog vacuum UV photoresist alicyclic polymer backbone glycol pendant; maleic anhydride norbornene trifluoromethylcarbinol glycol pendant polymer photoresist
IT Negative photoresists
(photoresist for 193 nm lithog. containing terpolymer of maleic anhydride and norbornene with bis-trifluoromethylcarbinol and norbornene with glycol pendant group that undergoes acid catalyzed pinacol rearrangement)
IT Rearrangement
(pinacol, photochem.; photoresist for 193 nm lithog. containing terpolymer of maleic anhydride and norbornene with bis-trifluoromethylcarbinol and norbornene with glycol pendant group that undergoes acid catalyzed pinacol rearrangement)
IT 75-59-2, Tetramethylammoniumhydroxide
RL: NUU (Other use, unclassified); USES (Uses)
(developer; photoresist for 193 nm lithog. containing terpolymer of maleic anhydride and norbornene with bis-trifluoromethylcarbinol and norbornene with glycol pendant group that undergoes acid catalyzed pinacol rearrangement)
IT 144317-44-2, Triphenylsulfonium nonaflate
RL: NUU (Other use, unclassified); USES (Uses)
(photoacid generator; photoresist for 193 nm lithog. containing terpolymer of maleic anhydride and norbornene with bis-trifluoromethylcarbinol and norbornene with glycol pendant group that undergoes acid catalyzed pinacol rearrangement)
IT **327610-81-1P** 327610-82-2P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(photoresist for 193 nm lithog. containing terpolymer of maleic anhydride and norbornene with bis-trifluoromethylcarbinol and norbornene with glycol pendant group that undergoes acid catalyzed pinacol rearrangement)

IT 196314-61-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polymerization with maleic anhydride and (dihydroxydimethylbutyl)bicyclo[2.2.1]heptene in synthesis of polymer photoresists for 193 nm lithog.)

IT 327610-80-0P, 5-(2,3-Dihydroxy-2,3-dimethylbutyl)bicyclo[2.2.1]heptene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polymerization with maleic anhydride in synthesis of polymer photoresists for 193 nm lithog.)

IT 17016-12-5P, 5-Bromomethylbicyclo[2.2.1]hept-2-ene 60283-66-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of (dihydroxydimethylbutyl)bicycloheptene for preparation of polymer photoresists for 193 nm lithog.)

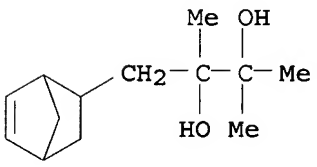
IT 646-97-9P, 1,1,1-Trifluoro-2-(trifluoromethyl)pent-4-en-2-ol
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of bis(trifluoromethyl)hydroxyethylbicycloheptene in synthesis of polymer photoresists for 193 nm lithog.)

IT **327610-81-1P**
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photoresist for 193 nm lithog. containing terpolymer of maleic anhydride and norbornene with bis-trifluoromethylcarbinol and norbornene with glycol pendant group that undergoes acid catalyzed pinacol rearrangement)

RN 327610-81-1 HCAPLUS
CN 2,5-Furandione, polymer with 1-bicyclo[2.2.1]hept-5-en-2-yl-2,3-dimethyl-2,3-butanediol and α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol (9CI) (CA INDEX NAME)

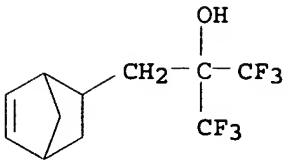
CM 1

CRN 327610-80-0
CMF C13 H22 O2



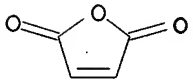

CM 2

CRN 196314-61-1
CMF C11 H12 F6 O



CM 3

CRN 108-31-6
CMF C4 H2 O3



RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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